

SEQUENCE LISTING

- <110> Genentech, Inc.
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Paoni, Nicholas F.
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Wood, William, I.
- <120> Secreted and Transmembrane Polypeptides and Nucleic
Acids Encoding the Same
- <130> 10466-14
- <140> 09/665,350
<141> 2000-09-18
- <150> PCT/US00/04414
<151> 2000-02-22
- <150> US 60/143,048
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- <150> US 60/145,698
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- <150> US 60/146,222
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- <150> PCT/US99/20594
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- <150> PCT/US99/20944
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<210> 2

<211> 353

<212> PRT

<213> Homo sapiens

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```

```

Arg Cys Arg Gly Leu Val Asp Lys Phe Asn Gln Gly Met Val Asp Thr
      35                      40                      45

```

```

Ala Lys Lys Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr
      50                      55                      60

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```

Leu Ser Lys Tyr Glu Ser Ser Glu Ile Arg Leu Leu Glu Ile Leu Glu
      65                      70                      75                      80

```

```

Gly Leu Cys Glu Ser Ser Asp Phe Glu Cys Asn Gln Met Leu Glu Ala
          85                      90                      95

```

```

Gln Glu Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys Ser Glu Tyr
      100                      105                      110

```

```

Pro Asp Leu Phe Glu Trp Phe Cys Val Lys Thr Leu Lys Val Cys Cys
      115                      120                      125

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Ser Pro Gly Thr Tyr Gly Pro Asp Cys Leu Ala Cys Gln Gly Gly Ser
      130                      135                      140

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Gln Arg Pro Cys Ser Gly Asn Gly His Cys Ser Gly Asp Gly Ser Arg
145 150 155 160

Gln Gly Asp Gly Ser Cys Arg Cys His Met Gly Tyr Gln Gly Pro Leu
165 170 175

Cys Thr Asp Cys Met Asp Gly Tyr Phe Ser Ser Leu Arg Asn Glu Thr
180 185 190

His Ser Ile Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly
195 200 205

Leu Thr Asn Arg Asp Cys Gly Glu Cys Glu Val Gly Trp Val Leu Asp
210 215 220

Glu Gly Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Pro Pro Pro
225 230 235 240

Cys Ser Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys
245 250 255

Glu Glu Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly
260 265 270

Asn Cys Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys
275 280 285

Ala Asp Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys
290 295 300

Asn Glu Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro
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<211> 2206

<212> DNA

<213> Homo sapiens

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aacagccctg gctgagggag ctgcagcgca gcagagtatc tgacggcgcc aggttgcgta 180
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caagagtact cataggattt gaagaagata tcctgattgt ttcagagggg aaaatggcac 420
cttttacaca tgatttcaga aaagcgcaac agagaatgcc agctattcct gtcaatatcc 480
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<210> 4

<211> 379

<212> PRT

<213> Homo sapiens

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```

```

Ile Leu Leu Cys Leu Leu Ala Leu Arg Ala Glu Ala Gly Pro Pro Gln
      20             25             30

```

```

Glu Glu Ser Leu Tyr Leu Trp Ile Asp Ala His Gln Ala Arg Val Leu
      35             40             45

```

```

Ile Gly Phe Glu Glu Asp Ile Leu Ile Val Ser Glu Gly Lys Met Ala
      50             55             60

```

```

Pro Phe Thr His Asp Phe Arg Lys Ala Gln Gln Arg Met Pro Ala Ile

```

| | | | | | | | | | | | | | | | |
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| Pro | Val | Asn | Ile | His | Ser | Met | Asn | Phe | Thr | Trp | Gln | Ala | Ala | Gly | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Glu | Tyr | Phe | Tyr | Glu | Phe | Leu | Ser | Leu | Arg | Ser | Leu | Asp | Lys | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ile | Met | Ala | Asp | Pro | Thr | Val | Asn | Val | Pro | Leu | Leu | Gly | Thr | Val | Pro |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| His | Lys | Ala | Ser | Val | Val | Gln | Val | Gly | Phe | Pro | Cys | Leu | Gly | Lys | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asp | Gly | Val | Ala | Ala | Phe | Glu | Val | Asp | Val | Ile | Val | Met | Asn | Ser | Glu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Gly | Asn | Thr | Ile | Leu | Gln | Thr | Pro | Gln | Asn | Ala | Ile | Phe | Phe | Lys | Thr |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Cys | Gln | Gln | Ala | Glu | Cys | Pro | Gly | Gly | Cys | Arg | Asn | Gly | Gly | Phe | Cys |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Asn | Glu | Arg | Arg | Ile | Cys | Glu | Cys | Pro | Asp | Gly | Phe | His | Gly | Pro | His |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Cys | Glu | Lys | Ala | Leu | Cys | Thr | Pro | Arg | Cys | Met | Asn | Gly | Gly | Leu | Cys |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Val | Thr | Pro | Gly | Phe | Cys | Ile | Cys | Pro | Pro | Gly | Phe | Tyr | Gly | Val | Asn |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Cys | Asp | Lys | Ala | Asn | Cys | Ser | Thr | Thr | Cys | Phe | Asn | Gly | Gly | Thr | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Tyr | Pro | Gly | Lys | Cys | Ile | Cys | Pro | Pro | Gly | Leu | Glu | Gly | Glu | Gln |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Cys | Glu | Ile | Ser | Lys | Cys | Pro | Gln | Pro | Cys | Arg | Asn | Gly | Gly | Lys | Cys |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ile | Gly | Lys | Ser | Lys | Cys | Lys | Cys | Ser | Lys | Gly | Tyr | Gln | Gly | Asp | Leu |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Cys | Ser | Lys | Pro | Val | Cys | Glu | Pro | Gly | Cys | Gly | Ala | His | Gly | Thr | Cys |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| His | Glu | Pro | Asn | Lys | Cys | Gln | Cys | Gln | Glu | Gly | Trp | His | Gly | Arg | His |
| | | | | 325 | | | | | 330 | | | | | 335 | |
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<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

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<211> 23

<212> DNA

<213> Artificial Sequence

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23

<210> 11

<211> 2197

<212> DNA

<213> Homo sapiens

<400> 11

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| ggcccagcc | cacaccttca | ccaggggcca | ggagccacca | tgtggcgatg | tccactgggg | 120 |
| ctactgctgt | tgctgccgct | ggctggccac | ttggctctgg | gtgcccagca | gggtcgtggg | 180 |
| cgcggggagc | tagcacggg | tctgcacctg | cggggcatcc | gggacgcggg | aggccggtac | 240 |
| tgccaggagc | aggacctgtg | ctgccgcggc | cgtgccgacg | actgtgcctt | gccctacctg | 300 |
| ggcgccatct | gttactgtga | cctcttctgc | aaccgcacgg | tctccgactg | ctgccctgac | 360 |
| ttctgggact | tctgcctcgg | cgtgccaccc | ccttttcccc | cgatccaagg | atgtatgcat | 420 |
| ggaggtcgta | tctatccagt | cttgggaacg | tactgggaca | actgtaaccg | ttgcacctgc | 480 |
| caggagaaca | ggcagtggca | tggtggatcc | agacatgata | aaagccatca | accagggcaa | 540 |
| ctatggctgg | caggctggga | accacagcgc | cttctggggc | atgaccttgg | atgagggcat | 600 |
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| caacctgatt | catgagcctc | ttgaccaagg | caactgtgca | ggctcctggg | ccttctccac | 780 |
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| gtcgccccag | aacctgctgt | cttgtgacac | ccaccagcag | cagggtgccc | gcggtggggc | 900 |
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| cttctcgggc | cgtgaacgag | acgaggctgg | ccctgcgcgc | ccctgtatga | tgcacagccg | 1020 |
| agccatgggt | cggggcaagc | gccaggccac | tgcctactgc | cccaacagct | atgttaataa | 1080 |
| caatgacata | taccaggtca | ctcctgtcta | ccgctcggc | tccaacgaca | aggagatcat | 1140 |
| gaaggagctg | atggagaatg | gccctgtcca | agcctcatg | gaggtgcatg | aggacttctt | 1200 |
| cctatacaag | ggaggcatct | acagccacac | gccagtgagc | cttgggaggc | cagagagata | 1260 |
| ccgcggcat | gggaccact | cagtcaagat | cacaggatgg | ggagaggaga | cgctgccaga | 1320 |

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<210> 12

<211> 164

<212> PRT

<213> Homo sapiens

<400> 12

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Met Trp Arg Cys Pro Leu Gly Leu Leu Leu Leu Leu Pro Leu Ala Gly
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```

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His Leu Ala Leu Gly Ala Gln Gln Gly Arg Gly Arg Arg Glu Leu Ala
      20                      25                      30

```

```

Pro Gly Leu His Leu Arg Gly Ile Arg Asp Ala Gly Gly Arg Tyr Cys
      35                      40                      45

```

```

Gln Glu Gln Asp Leu Cys Cys Arg Gly Arg Ala Asp Asp Cys Ala Leu
      50                      55                      60

```

```

Pro Tyr Leu Gly Ala Ile Cys Tyr Cys Asp Leu Phe Cys Asn Arg Thr
      65                      70                      75                      80

```

```

Val Ser Asp Cys Cys Pro Asp Phe Trp Asp Phe Cys Leu Gly Val Pro
      85                      90                      95

```

```

Pro Pro Phe Pro Pro Ile Gln Gly Cys Met His Gly Gly Arg Ile Tyr
      100                      105                      110

```

```

Pro Val Leu Gly Thr Tyr Trp Asp Asn Cys Asn Arg Cys Thr Cys Gln
      115                      120                      125

```

```

Glu Asn Arg Gln Trp His Gly Gly Ser Arg His Asp Gln Ser His Gln
      130                      135                      140

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Pro Gly Gln Leu Trp Leu Ala Gly Trp Glu Pro Gln Arg Leu Leu Gly
      145                      150                      155                      160

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His Asp Pro Gly

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 <211> 533
 <212> DNA
 <213> Homo sapiens

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 <223> a, t, c or g

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<210> 14
 <211> 24
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<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 14

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24

<210> 15

<211> 22

<212> DNA

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<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 15

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22

<210> 16

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

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50

<210> 17

<211> 960

<212> DNA

<213> Homo sapiens

<400> 17

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<210> 18

<211> 189

<212> PRT

<213> Homo sapiens

<400> 18

Met Thr His Arg Thr Thr Thr Trp Ala Arg Arg Thr Ser Arg Ala Val
 1 5 10 15

Thr Pro Thr Cys Ala Thr Pro Ala Gly Pro Met Pro Cys Ser Arg Leu
 20 25 30

Pro Pro Ser Leu Arg Cys Ser Leu His Ser Ala Cys Cys Ser Gly Asp
 35 40 45

Pro Ala Ser Tyr Arg Leu Trp Gly Ala Pro Leu Gln Pro Thr Leu Gly
 50 55 60

Val Val Pro Gln Ala Ser Val Pro Leu Leu Thr Asp Leu Ala Gln Trp
 65 70 75 80

Glu Pro Val Leu Val Pro Glu Ala His Pro Asn Ala Ser Leu Thr Met
 85 90 95

Tyr Val Cys Thr Pro Val Pro His Pro Asp Pro Pro Met Ala Leu Ser
 100 105 110

Arg Thr Pro Thr Arg Gln Ile Ser Ser Ser Asp Thr Asp Pro Pro Ala
 115 120 125

Asp Gly Pro Ser Asn Pro Leu Cys Cys Cys Phe His Gly Pro Ala Phe
 130 135 140

Ser Thr Leu Asn Pro Val Leu Arg His Leu Phe Pro Gln Glu Ala Phe
 145 150 155 160

Pro Ala His Pro Ile Tyr Asp Leu Ser Gln Val Trp Ser Val Val Ser
 165 170 175

Pro Ala Pro Ser Arg Gly Gln Ala Leu Arg Arg Ala Gln
 180 185

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 19

tgctgtgcta ctctgcaaaa gccc

24

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 20

tgcacaagtc ggtgtcacag cacg

24

<210> 21

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 21

agcaacgagg actgacctgca ggtggagaac tgcacccagc tggg

44

<210> 22

<211> 1200

<212> DNA

<213> Homo sapiens

<400> 22

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gaaccgaccag ctgagcaggc ggcagatccg cgagtaccaa ctctacagca ggaccagtgg 180
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<210> 23

<211> 205

<212> PRT

<213> Homo sapiens

<400> 23

Met Gly Ala Ala Arg Leu Leu Pro Asn Leu Thr Leu Cys Leu Gln Leu
 1 5 10 15

Leu Ile Leu Cys Cys Gln Thr Gln Tyr Val Arg Asp Gln Gly Ala Met
 20 25 30

Thr Asp Gln Leu Ser Arg Arg Gln Ile Arg Glu Tyr Gln Leu Tyr Ser
 35 40 45

Arg Thr Ser Gly Lys His Val Gln Val Thr Gly Arg Arg Ile Ser Ala
 50 55 60

Thr Ala Glu Asp Gly Asn Lys Phe Ala Lys Leu Ile Val Glu Thr Asp
 65 70 75 80

Thr Phe Gly Ser Arg Val Arg Ile Lys Gly Ala Glu Ser Glu Lys Tyr
 85 90 95

Ile Cys Met Asn Lys Arg Gly Lys Leu Ile Gly Lys Pro Ser Gly Lys
 100 105 110

Ser Lys Asp Cys Val Phe Thr Glu Ile Val Leu Glu Asn Asn Tyr Thr
 115 120 125

Ala Phe Gln Asn Ala Arg His Glu Gly Trp Phe Met Ala Phe Thr Arg
 130 135 140

Gln Gly Arg Pro Arg Gln Ala Ser Arg Ser Arg Gln Asn Gln Arg Glu
 145 150 155 160

Ala His Phe Ile Lys Arg Leu Tyr Gln Gly Gln Leu Pro Phe Pro Asn
 165 170 175

His Ala Glu Lys Gln Lys Gln Phe Glu Phe Val Gly Ser Ala Pro Thr
 180 185 190

Arg Arg Thr Lys Arg Thr Arg Arg Pro Gln Pro Leu Thr
 195 200 205

<210> 24

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 24

cagtacgtga gggaccaggg cgccatga

28

<210> 25

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 25
 ccggtgacct gcacgtgctt gccca

24

<210> 26
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<220>
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 <222> (21)
 <223> a, t, c or g

<400> 26
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41

<210> 27
 <211> 2479
 <212> DNA
 <213> Homo sapiens

<400> 27
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 ttaccatacg cctcaggac gttccctcta gctggagttc tggacttcaa cagaacccca 180
 tccagtcatt ttgattttgc tgtttatttt ttttttcttt ttctttttcc caccacattg 240
 tattttattt ccgtacttca gaaatgggcc tacagaccac aaagtggccc agccatgggg 300
 cttttttcct gaagtcttgg cttatcattt ccctggggct ctactcacag gtgtccaaac 360
 tcctggcctg ccctagtgtg tgccgctgcg acaggaactt tgtctactgt aatgagcgaa 420
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 caaatctgcg taagctggaa cggctggata tatccaacaa ccaactgcgg atgctgactc 1140

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<210> 28

<211> 660

<212> PRT

<213> Homo sapiens

<400> 28

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Met Gly Leu Gln Thr Thr Lys Trp Pro Ser His Gly Ala Phe Phe Leu
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```

```

Lys Ser Trp Leu Ile Ile Ser Leu Gly Leu Tyr Ser Gln Val Ser Lys
      20              25              30

```

```

Leu Leu Ala Cys Pro Ser Val Cys Arg Cys Asp Arg Asn Phe Val Tyr
      35              40              45

```

```

Cys Asn Glu Arg Ser Leu Thr Ser Val Pro Leu Gly Ile Pro Glu Gly
      50              55              60

```

```

Val Thr Val Leu Tyr Leu His Asn Asn Gln Ile Asn Asn Ala Gly Phe
      65              70              75              80

```

```

Pro Ala Glu Leu His Asn Val Gln Ser Val His Thr Val Tyr Leu Tyr
      85              90              95

```

```

Gly Asn Gln Leu Asp Glu Phe Pro Met Asn Leu Pro Lys Asn Val Arg
      100             105             110

```

```

Val Leu His Leu Gln Glu Asn Asn Ile Gln Thr Ile Ser Arg Ala Ala
      115             120             125

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Leu Ala Gln Leu Leu Lys Leu Glu Glu Leu His Leu Asp Asp Asn Ser
 130 135 140
 Ile Ser Thr Val Gly Val Glu Asp Gly Ala Phe Arg Glu Ala Ile Ser
 145 150 155 160
 Leu Lys Leu Leu Phe Leu Ser Lys Asn His Leu Ser Ser Val Pro Val
 165 170 175
 Gly Leu Pro Val Asp Leu Gln Glu Leu Arg Val Asp Glu Asn Arg Ile
 180 185 190
 Ala Val Ile Ser Asp Met Ala Phe Gln Asn Leu Thr Ser Leu Glu Arg
 195 200 205
 Leu Ile Val Asp Gly Asn Leu Leu Thr Asn Lys Gly Ile Ala Glu Gly
 210 215 220
 Thr Phe Ser His Leu Thr Lys Leu Lys Glu Phe Ser Ile Val Arg Asn
 225 230 235 240
 Ser Leu Ser His Pro Pro Pro Asp Leu Pro Gly Thr His Leu Ile Arg
 245 250 255
 Leu Tyr Leu Gln Asp Asn Gln Ile Asn His Ile Pro Leu Thr Ala Phe
 260 265 270
 Ser Asn Leu Arg Lys Leu Glu Arg Leu Asp Ile Ser Asn Asn Gln Leu
 275 280 285
 Arg Met Leu Thr Gln Gly Val Phe Asp Asn Leu Ser Asn Leu Lys Gln
 290 295 300
 Leu Thr Ala Arg Asn Asn Pro Trp Phe Cys Asp Cys Ser Ile Lys Trp
 305 310 315 320
 Val Thr Glu Trp Leu Lys Tyr Ile Pro Ser Ser Leu Asn Val Arg Gly
 325 330 335
 Phe Met Cys Gln Gly Pro Glu Gln Val Arg Gly Met Ala Val Arg Glu
 340 345 350
 Leu Asn Met Asn Leu Leu Ser Cys Pro Thr Thr Thr Pro Gly Leu Pro
 355 360 365
 Leu Phe Thr Pro Ala Pro Ser Thr Ala Ser Pro Thr Thr Gln Pro Pro
 370 375 380
 Thr Leu Ser Ile Pro Asn Pro Ser Arg Ser Tyr Thr Pro Pro Thr Pro
 385 390 395 400
 Thr Thr Ser Lys Leu Pro Thr Ile Pro Asp Trp Asp Gly Arg Glu Arg

| 405 | | | | | | | | | | 410 | | | | | 415 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Val | Thr | Pro | Pro | Ile | Ser | Glu | Arg | Ile | Gln | Leu | Ser | Ile | His | Phe | Val | | | | |
| | | | 420 | | | | | 425 | | | | | 430 | | | | | | |
| Asn | Asp | Thr | Ser | Ile | Gln | Val | Ser | Trp | Leu | Ser | Leu | Phe | Thr | Val | Met | | | | |
| | | 435 | | | | | 440 | | | | | 445 | | | | | | | |
| Ala | Tyr | Lys | Leu | Thr | Trp | Val | Lys | Met | Gly | His | Ser | Leu | Val | Gly | Gly | | | | |
| | 450 | | | | | 455 | | | | | 460 | | | | | | | | |
| Ile | Val | Gln | Glu | Arg | Ile | Val | Ser | Gly | Glu | Lys | Gln | His | Leu | Ser | Leu | | | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | | | |
| Val | Asn | Leu | Glu | Pro | Arg | Ser | Thr | Tyr | Arg | Ile | Cys | Leu | Val | Pro | Leu | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Asp | Ala | Phe | Asn | Tyr | Arg | Ala | Val | Glu | Asp | Thr | Ile | Cys | Ser | Glu | Ala | | | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | | | |
| Thr | Thr | His | Ala | Ser | Tyr | Leu | Asn | Asn | Gly | Ser | Asn | Thr | Ala | Ser | Ser | | | | |
| | | 515 | | | | | 520 | | | | | 525 | | | | | | | |
| His | Glu | Gln | Thr | Thr | Ser | His | Ser | Met | Gly | Ser | Pro | Phe | Leu | Leu | Ala | | | | |
| | 530 | | | | | 535 | | | | | 540 | | | | | | | | |
| Gly | Leu | Ile | Gly | Gly | Ala | Val | Ile | Phe | Val | Leu | Val | Val | Leu | Leu | Ser | | | | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | | | | |
| Val | Phe | Cys | Trp | His | Met | His | Lys | Lys | Gly | Arg | Tyr | Thr | Ser | Gln | Lys | | | | |
| | | | | 565 | | | | | 570 | | | | | 575 | | | | | |
| Trp | Lys | Tyr | Asn | Arg | Gly | Arg | Arg | Lys | Asp | Asp | Tyr | Cys | Glu | Ala | Gly | | | | |
| | | | 580 | | | | | 585 | | | | | 590 | | | | | | |
| Thr | Lys | Lys | Asp | Asn | Ser | Ile | Leu | Glu | Met | Thr | Glu | Thr | Ser | Phe | Gln | | | | |
| | | 595 | | | | | 600 | | | | | 605 | | | | | | | |
| Ile | Val | Ser | Leu | Asn | Asn | Asp | Gln | Leu | Leu | Lys | Gly | Asp | Phe | Arg | Leu | | | | |
| | 610 | | | | | 615 | | | | | 620 | | | | | | | | |
| Gln | Pro | Ile | Tyr | Thr | Pro | Asn | Gly | Gly | Ile | Asn | Tyr | Thr | Asp | Cys | His | | | | |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 | | | | |
| Ile | Pro | Asn | Asn | Met | Arg | Tyr | Cys | Asn | Ser | Ser | Val | Pro | Asp | Leu | Glu | | | | |
| | | | | 645 | | | | | 650 | | | | | 655 | | | | | |
| His | Cys | His | Thr | | | | | | | | | | | | | | | | |
| | | | 660 | | | | | | | | | | | | | | | | |

<210> 29

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 29

cggtctacct gtatggcaac c

21

<210> 30

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 30

gcaggacaac cagataaacc ac

22

<210> 31

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 31

acgcagattt gagaaggctg tc

22

<210> 32

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 32

ttcacgggct gctcttgccc agctcttgaa gcttgaagag ctgcac

46

<210> 33

<211> 3449

<212> DNA

<213> Homo sapiens

<400> 33

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cgctcccac gagcgatccc cgaggagagc cgcggccctc ggcgaggcga agaggccgac 120

| | | | | | | |
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| gaggaagacc | cgggtggtctg | cgccccctgcc | tgcgttccca | ggcgccggcg | gctgcagcct | 180 |
| tgccccctctt | gctcgcccttg | aaaatggaaa | agatgctcgc | aggctgcttt | ctgctgatcc | 240 |
| tccgacagat | cgteectctc | cctgccgagg | ccagggagcg | gtcacgtggg | aggctccatct | 300 |
| ctaggggcag | acacgctcgg | accacccgc | agacggccct | tctggagagt | tctgtgaga | 360 |
| acaagcgggc | agacctggtt | ttcatcattg | acagctctcg | cagtgtcaac | acctatgact | 420 |
| atgcaaaggt | caaggagttc | atcgtggaca | tcttgcaatt | cttggacatt | ggtctgatg | 480 |
| tccccgagt | gggcctgctc | caatatggca | gcactgtcaa | gaatgagttc | tccctcaaga | 540 |
| ccttcaagag | gaagtccgag | gtggagcgtg | ctgtcaagag | gatgcggcat | ctgtccacgg | 600 |
| gcaccatgac | tgggctggcc | atccagtatg | ccctgaacat | cgcattctca | gaagcagagg | 660 |
| gggcccggcc | cctgagggag | aatgtgccac | gggtcataat | gatcgtgaca | gatgggagac | 720 |
| ctcaggactc | cgtggccgag | gtggctgcta | aggcacggga | cacgggcata | ctaattcttg | 780 |
| ccattggtgt | gggcccaggta | gacttcaaca | ccttgaagtc | cattgggagt | gagccccatg | 840 |
| aggaccatgt | cttccttggtg | gccaatttca | gccagattga | gacgctgacc | tccgtgttcc | 900 |
| agaagaagtt | gtgcacggcc | cacatgtgca | gcacctgga | gcataactgt | gccacttct | 960 |
| gcatacaacat | ccctggtctca | tacgtctgca | ggtgcaaaca | aggctacatt | ctcaactcgg | 1020 |
| atcagacgac | ttgcagaatc | caggatctgt | gtgccatgga | ggaccacaac | tgtgagcagc | 1080 |
| tctgtgtgaa | tgtgcccggc | tccttcgtct | gccagtgcta | cagtggctac | gccctggctg | 1140 |
| aggatgggaa | gaagtggtgtg | gctgtggact | actgtgcctc | agaaaaccac | ggatgtgaac | 1200 |
| atgagtgtgt | aaatgctgat | ggctcctacc | tttgccagtg | ccatgaagga | tttjctctta | 1260 |
| accagatga | aaaaacgtgc | acaaggatca | actactgtgc | actgaacaaa | ccgggctgtg | 1320 |
| agcatgagtgt | cgtcaacatg | gaggagagct | actactgccg | ctgccaccgt | ggctacactc | 1380 |
| tggaccccaa | tggcaaaaacc | tgcagccgag | tggaccactg | tgcacagcag | gaccatggct | 1440 |
| gtgagcagct | gtgtctgaac | acggaggatt | ccttcgtctg | ccagtgtctca | gaaggcttcc | 1500 |
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| gttgtgaata | ctcctgtgtc | aacatggaca | gatectttgc | ctgtcagtgt | cctgagggac | 1620 |
| acgtgtctccg | cagcgatggg | aagacgtgtg | caaaattgga | ctcttgtgtc | ctgggggacc | 1680 |
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| gttatatact | ccgtgaagat | ggaaaaacct | gcagaaggaa | agatgtctgc | caagctatag | 1800 |
| accatggctg | tgaacacatt | tgtgtgaaca | gtgacgactc | atacacgtgc | gagtgtttgg | 1860 |
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| cccaccatgg | ctgcgaacac | atttgtgtta | ataatgggaa | ttcctacatc | tgcaaatgct | 1980 |
| cagagggagt | tgttctagct | gaggacggaa | gacggtgcaa | gaaatgcact | gaaggcccaa | 2040 |
| ttgacctggt | ctttgtgata | gatggatcca | agagtcttgg | agaagagaat | tttgaggtcg | 2100 |
| tgaagcagtt | tgtcactgga | attatagatt | ccttgacaat | ttcccccaaa | gccgctcgag | 2160 |
| tggggctgct | ccagtattcc | acacaggtec | acacagagtt | cactctgaga | aacttcaact | 2220 |
| cagccaaaga | catgaaaaaa | gccgtggccc | acatgaaata | catgggaaag | ggctctatga | 2280 |
| ctgggctggc | cctgaaacac | atgtttgaga | gaagttttac | ccaaggagaa | ggggccaggc | 2340 |
| ccctttccac | aagggtgccc | agagcagcca | ttgtgttcac | cgacggacgg | gctcaggatg | 2400 |
| acgtctccga | gtgggccagt | aaagccaagg | ccaatggtat | cactatgtat | gctgttgggg | 2460 |
| taggaaaagc | cattgaggag | gaactacaag | agattgcctc | tgagcccaca | aacaagcatc | 2520 |
| tcttctatgc | cgaagacttc | agcacaatgg | atgagataag | tgaaaaactc | aagaaaggca | 2580 |
| tctgtgaagc | tctagaagac | tccgatggaa | gacaggactc | tccagcaggg | gaactgccaa | 2640 |
| aaacggtcca | acagccaaca | gaatctgagc | cagtcacctat | aaatatccaa | gacctacttt | 2700 |
| cctgttctaa | ttttgcagtg | caacacagat | atctgtttga | agaagacaat | cttttacggg | 2760 |
| ctacacaaaa | gctttcccat | tcaacaaaaac | cttcaggaag | ccctttggaa | gaaaaacacg | 2820 |
| atcaatgcaa | atgtgaaaaac | cttataatgt | tccagaacct | tgcaaacgaa | gaagtaagaa | 2880 |
| aattaacaca | gcgcttagaa | gaaatgacac | agagaatgga | agccctggaa | aatcgccctga | 2940 |
| gatacagatg | aagattagaa | atcgcgacac | atttgtagtc | attgtatcac | ggattacaat | 3000 |
| gaacgcagtg | cagagcccca | aagctcaggc | tattgtttaa | tcaataatgt | tgtgaagtaa | 3060 |
| aacaatcagt | actgagaaac | ctggtttgcc | acagaacaaa | gacaagaagt | atacactaac | 3120 |
| ttgtataaat | ttatctagga | aaaaaatcct | tcagaattct | aagatgaatt | taccaggtga | 3180 |
| gaatgaataa | gctatgcaag | gtattttgta | atatactgtg | gacacaactt | gcttctgcct | 3240 |
| catcctgcct | tagtgtgcaa | tctcatttga | ctatacgata | aagtttgcac | agtcttactt | 3300 |

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<210> 34

<211> 915

<212> PRT

<213> Homo sapiens

<400> 34

Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
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Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
 20 25 30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
 35 40 45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
 50 55 60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
 65 70 75 80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
 85 90 95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
 100 105 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
 115 120 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
 130 135 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
 145 150 155 160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
 165 170 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
 180 185 190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
 195 200 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
 210 215 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His

| | | | | | | |
|-----------------|---------------------|-----------------|-----------------|-----|--|-----|
| 225 | | 230 | | 235 | | 240 |
| Met Cys Ser Thr | Leu Glu His Asn Cys | Ala His Phe Cys | Ile Asn Ile | | | |
| | 245 | 250 | 255 | | | |
| Pro Gly Ser Tyr | Val Cys Arg Cys | Lys Gln Gly Tyr | Ile Leu Asn Ser | | | |
| | 260 | 265 | 270 | | | |
| Asp Gln Thr Thr | Cys Arg Ile Gln Asp | Leu Cys Ala Met | Glu Asp His | | | |
| | 275 | 280 | 285 | | | |
| Asn Cys Glu Gln | Leu Cys Val Asn Val | Pro Gly Ser Phe | Val Cys Gln | | | |
| | 290 | 295 | 300 | | | |
| Cys Tyr Ser Gly | Tyr Ala Leu Ala | Glu Asp Gly Lys | Arg Cys Val Ala | | | |
| | 305 | 310 | 315 | 320 | | |
| Val Asp Tyr Cys | Ala Ser Glu Asn | His Gly Cys Glu | His Glu Cys Val | | | |
| | 325 | 330 | 335 | | | |
| Asn Ala Asp Gly | Ser Tyr Leu Cys | Gln Cys His Glu | Gly Phe Ala Leu | | | |
| | 340 | 345 | 350 | | | |
| Asn Pro Asp Glu | Lys Thr Cys Thr | Arg Ile Asn Tyr | Cys Ala Leu Asn | | | |
| | 355 | 360 | 365 | | | |
| Lys Pro Gly Cys | Glu His Glu Cys | Val Asn Met Glu | Glu Ser Tyr Tyr | | | |
| | 370 | 375 | 380 | | | |
| Cys Arg Cys His | Arg Gly Tyr Thr | Leu Asp Pro Asn | Gly Lys Thr Cys | | | |
| | 385 | 390 | 395 | 400 | | |
| Ser Arg Val Asp | His Cys Ala Gln | Gln Asp His Gly | Cys Glu Gln Leu | | | |
| | 405 | 410 | 415 | | | |
| Cys Leu Asn Thr | Glu Asp Ser Phe | Val Cys Gln Cys | Ser Glu Gly Phe | | | |
| | 420 | 425 | 430 | | | |
| Leu Ile Asn Glu | Asp Leu Lys Thr | Cys Ser Arg Val | Asp Tyr Cys Leu | | | |
| | 435 | 440 | 445 | | | |
| Leu Ser Asp His | Gly Cys Glu Tyr | Ser Cys Val Asn | Met Asp Arg Ser | | | |
| | 450 | 455 | 460 | | | |
| Phe Ala Cys Gln | Cys Pro Glu Gly | His Val Leu Arg | Ser Asp Gly Lys | | | |
| | 465 | 470 | 475 | 480 | | |
| Thr Cys Ala Lys | Leu Asp Ser Cys | Ala Leu Gly Asp | His Gly Cys Glu | | | |
| | 485 | 490 | 495 | | | |
| His Ser Cys Val | Ser Ser Glu Asp | Ser Phe Val Cys | Gln Cys Phe Glu | | | |
| | 500 | 505 | 510 | | | |

Gly Tyr Ile Leu Arg Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val
 515 520 525
 Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp
 530 535 540
 Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Ala Glu Asp
 545 550 555 560
 Gly Lys Arg Cys Arg Arg Lys Asp Val Cys Lys Ser Thr His His Gly
 565 570 575
 Cys Glu His Ile Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys
 580 585 590
 Ser Glu Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys
 595 600 605
 Thr Glu Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser
 610 615 620
 Leu Gly Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile
 625 630 635 640
 Ile Asp Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu
 645 650 655
 Gln Tyr Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn
 660 665 670
 Ser Ala Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly
 675 680 685
 Lys Gly Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser
 690 695 700
 Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu Ser Thr Arg Val Pro Arg
 705 710 715 720
 Ala Ala Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu
 725 730 735
 Trp Ala Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly
 740 745 750
 Val Gly Lys Ala Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro
 755 760 765
 Thr Asn Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu
 770 775 780
 Ile Ser Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser
 785 790 795 800

Arg Tyr Arg
915

23

22

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 37

gcctgtcagt gtcctgaggg acacgtgctc cgcagcgatg ggaag

45

<210> 38

<211> 1813

<212> DNA

<213> Homo sapiens

<400> 38

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gtctccaggg tgtgccccat gtgggggcaa acgtgacctc gagctgccag tctccaagga 660
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<210> 39

<211> 390

<212> PRT

<213> Homo sapiens

<400> 39

Met Ile Ser Leu Pro Gly Pro Leu Val Thr Asn Leu Leu Arg Phe Leu

| | | | |
|-----|---|-------------------------------------|---|
| 1 | 5 | 10 | 15 |
| Phe | Leu Gly | Leu Ser Ala | Leu Ala Pro Pro Ser Arg Ala Gln Leu Gln |
| | 20 | 25 | 30 |
| Leu | His Leu Pro Ala Asn Arg | Leu Gln Ala Val Glu Gly Gly Glu Val | |
| | 35 | 40 | 45 |
| Val | Leu Pro Ala Trp Tyr Thr | Leu His Gly Glu Val Ser Ser Ser Gln | |
| | 50 | 55 | 60 |
| Pro | Trp Glu Val Pro Phe Val Met Trp Phe Phe Lys Gln Lys Glu Lys | | |
| | 65 | 70 | 75 80 |
| Glu | Asp Gln Val Leu Ser Tyr Ile Asn Gly Val Thr Thr Ser Lys Pro | | |
| | 85 | 90 | 95 |
| Gly | Val Ser Leu Val Tyr Ser Met Pro Ser Arg Asn Leu Ser Leu Arg | | |
| | 100 | 105 | 110 |
| Leu | Glu Gly Leu Gln Glu Lys Asp Ser Gly Pro Tyr Ser Cys Ser Val | | |
| | 115 | 120 | 125 |
| Asn | Val Gln Asp Lys Gln Gly Lys Ser Arg Gly His Ser Ile Lys Thr | | |
| | 130 | 135 | 140 |
| Leu | Glu Leu Asn Val Leu Val Pro Pro Ala Pro Pro Ser Cys Arg Leu | | |
| | 145 | 150 | 155 160 |
| Gln | Gly Val Pro His Val Gly Ala Asn Val Thr Leu Ser Cys Gln Ser | | |
| | 165 | 170 | 175 |
| Pro | Arg Ser Lys Pro Ala Val Gln Tyr Gln Trp Asp Arg Gln Leu Pro | | |
| | 180 | 185 | 190 |
| Ser | Phe Gln Thr Phe Phe Ala Pro Ala Leu Asp Val Ile Arg Gly Ser | | |
| | 195 | 200 | 205 |
| Leu | Ser Leu Thr Asn Leu Ser Ser Ser Met Ala Gly Val Tyr Val Cys | | |
| | 210 | 215 | 220 |
| Lys | Ala His Asn Glu Val Gly Thr Ala Gln Cys Asn Val Thr Leu Glu | | |
| | 225 | 230 | 235 240 |
| Val | Ser Thr Gly Pro Gly Ala Ala Val Val Ala Gly Ala Val Val Gly | | |
| | 245 | 250 | 255 |
| Thr | Leu Val Gly Leu Gly Leu Leu Ala Gly Leu Val Leu Leu Tyr His | | |
| | 260 | 265 | 270 |
| Arg | Arg Gly Lys Ala Leu Glu Glu Pro Ala Asn Asp Ile Lys Glu Asp | | |
| | 275 | 280 | 285 |

Ala Ile Ala Pro Arg Thr Leu Pro Trp Pro Lys Ser Ser Asp Thr Ile
 290 295 300

Ser Lys Asn Gly Thr Leu Ser Ser Val Thr Ser Ala Arg Ala Leu Arg
 305 310 315 320

Pro Pro His Gly Pro Pro Arg Pro Gly Ala Leu Thr Pro Thr Pro Ser
 325 330 335

Leu Ser Ser Gln Ala Leu Pro Ser Pro Arg Leu Pro Thr Thr Asp Gly
 340 345 350

Ala His Pro Gln Pro Ile Ser Pro Ile Pro Gly Gly Val Ser Ser Ser
 355 360 365

Gly Leu Ser Arg Met Gly Ala Val Pro Val Met Val Pro Ala Gln Ser
 370 375 380

Gln Ala Gly Ser Leu Val
 385 390

<210> 40

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 40

agggtctcca ggagaaagac tc

22

<210> 41

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 41

attgtgggcc ttgcagacat agac

24

<210> 42

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 42
ggccacagca tcaaaacctt agaactcaat gtactgggtc ctccagctcc 50

<210> 43
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 43
gtgtgacaca gcgtgggc 18

<210> 44
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 44
gacccggcagg cttctgcg 18

<210> 45
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 45
cagcagcttc agccaccagg agtgg 25

<210> 46
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 46
ctgagccgtg ggctgcagtc tcgc 24

<210> 47

<211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 47
 ccgactacga ctggttcttc atcatgcagg atgacacata tgtgc 45

<210> 48
 <211> 2822
 <212> DNA
 <213> Homo sapiens

<400> 48
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 gtgaaatacg caatggaatt gaagcctgct attgcaacat gggattttca ggaaatgggtg 180
 tcacaatttg tgaagatgat aatgaatgtg gaaatttaac tcagtcctgt ggcgaaaatg 240
 ctaattgcac taacacagaa ggaagttatt attgtatgtg tgtacctggc ttcagatcca 300
 gcagtaacca agacagggtt atcactaatg atggaaccgt ctgtatagaa aatgtgaatg 360
 caaactgcc a tttagataat gtctgtatag ctgcaaatat taataaaaact ttaacaaaaa 420
 tcagatccat aaaagaacct gtggctttgc tacaagaagt ctatagaaat tctgtgacag 480
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 aatttgtaaa aaccgtgaat aattttgttc aaagggatac atttgtagtt tgggacaagt 660
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 ctttaaggat atcccagagc ttccaaaaga ccacagagtt tgatacaaat tcaacggata 780
 tagctctcaa agttttcttt ttgtattcat ataactgaa acatattcat cctcatatga 840
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<210> 49
<211> 690
<212> PRT
<213> Homo sapiens
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| | | | | | | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| <400> | 49 | | | | | | | | | | | | | | | |
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| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Ser | Tyr | Thr | Gln | Asn | Cys | Thr | Lys | Thr | Pro | Cys | Leu | Pro | Asn | Ala | Lys | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Cys | Glu | Ile | Arg | Asn | Gly | Ile | Glu | Ala | Cys | Tyr | Cys | Asn | Met | Gly | Phe | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Ser | Gly | Asn | Gly | Val | Thr | Ile | Cys | Glu | Asp | Asp | Asn | Glu | Cys | Gly | Asn | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Leu | Thr | Gln | Ser | Cys | Gly | Glu | Asn | Ala | Asn | Cys | Thr | Asn | Thr | Glu | Gly | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| Ser | Tyr | Tyr | Cys | Met | Cys | Val | Pro | Gly | Phe | Arg | Ser | Ser | Ser | Asn | Gln | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Arg | Phe | Ile | Thr | Asn | Asp | Gly | Thr | Val | Cys | Ile | Glu | Asn | Val | Asn | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Ala | Asn | Cys | His | Leu | Asp | Asn | Val | Cys | Ile | Ala | Ala | Asn | Ile | Asn | Lys | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| Thr | Leu | Thr | Lys | Ile | Arg | Ser | Ile | Lys | Glu | Pro | Val | Ala | Leu | Leu | Gln | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Glu | Val | Tyr | Arg | Asn | Ser | Val | Thr | Asp | Leu | Ser | Pro | Thr | Asp | Ile | Ile | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Thr | Tyr | Ile | Glu | Ile | Leu | Ala | Glu | Ser | Ser | Ser | Leu | Leu | Gly | Tyr | Lys | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Asn | Asn | Thr | Ile | Ser | Ala | Lys | Asp | Thr | Leu | Ser | Asn | Ser | Thr | Leu | Thr | |

| | | |
|---|-----|-----|
| 180 | 185 | 190 |
| Glu Phe Val Lys Thr Val Asn Asn Phe Val Gln Arg Asp Thr Phe Val | | |
| 195 | 200 | 205 |
| Val Trp Asp Lys Leu Ser Val Asn His Arg Arg Thr His Leu Thr Lys | | |
| 210 | 215 | 220 |
| Leu Met His Thr Val Glu Gln Ala Thr Leu Arg Ile Ser Gln Ser Phe | | |
| 225 | 230 | 235 |
| Gln Lys Thr Thr Glu Phe Asp Thr Asn Ser Thr Asp Ile Ala Leu Lys | | |
| 245 | 250 | 255 |
| Val Phe Phe Phe Asp Ser Tyr Asn Met Lys His Ile His Pro His Met | | |
| 260 | 265 | 270 |
| Asn Met Asp Gly Asp Tyr Ile Asn Ile Phe Pro Lys Arg Lys Ala Ala | | |
| 275 | 280 | 285 |
| Tyr Asp Ser Asn Gly Asn Val Ala Val Ala Phe Leu Tyr Tyr Lys Ser | | |
| 290 | 295 | 300 |
| Ile Gly Pro Leu Leu Ser Ser Ser Asp Asn Phe Leu Leu Lys Pro Gln | | |
| 305 | 310 | 315 |
| Asn Tyr Asp Asn Ser Glu Glu Glu Glu Arg Val Ile Ser Ser Val Ile | | |
| 325 | 330 | 335 |
| Ser Val Ser Met Ser Ser Asn Pro Pro Thr Leu Tyr Glu Leu Glu Lys | | |
| 340 | 345 | 350 |
| Ile Thr Phe Thr Leu Ser His Arg Lys Val Thr Asp Arg Tyr Arg Ser | | |
| 355 | 360 | 365 |
| Leu Cys Ala Phe Trp Asn Tyr Ser Pro Asp Thr Met Asn Gly Ser Trp | | |
| 370 | 375 | 380 |
| Ser Ser Glu Gly Cys Glu Leu Thr Tyr Ser Asn Glu Thr His Thr Ser | | |
| 385 | 390 | 395 |
| Cys Arg Cys Asn His Leu Thr His Phe Ala Ile Leu Met Ser Ser Gly | | |
| 405 | 410 | 415 |
| Pro Ser Ile Gly Ile Lys Asp Tyr Asn Ile Leu Thr Arg Ile Thr Gln | | |
| 420 | 425 | 430 |
| Leu Gly Ile Ile Ile Ser Leu Ile Cys Leu Ala Ile Cys Ile Phe Thr | | |
| 435 | 440 | 445 |
| Phe Trp Phe Phe Ser Glu Ile Gln Ser Thr Arg Thr Thr Ile His Lys | | |
| 450 | 455 | 460 |

Asn Leu Cys Cys Ser Leu Phe Leu Ala Glu Leu Val Phe Leu Val Gly
 465 470 475 480
 Ile Asn Thr Asn Thr Asn Lys Leu Phe Cys Ser Ile Ile Ala Gly Leu
 485 490 495
 Leu His Tyr Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Ile Glu Gly
 500 505 510
 Ile His Leu Tyr Leu Ile Val Val Gly Val Ile Tyr Asn Lys Gly Phe
 515 520 525
 Leu His Lys Asn Phe Tyr Ile Phe Gly Tyr Leu Ser Pro Ala Val Val
 530 535 540
 Val Gly Phe Ser Ala Ala Leu Gly Tyr Arg Tyr Tyr Gly Thr Thr Lys
 545 550 555 560
 Val Cys Trp Leu Ser Thr Glu Asn Asn Phe Ile Trp Ser Phe Ile Gly
 565 570 575
 Pro Ala Cys Leu Ile Ile Leu Val Asn Leu Leu Ala Phe Gly Val Ile
 580 585 590
 Ile Tyr Lys Val Phe Arg His Thr Ala Gly Leu Lys Pro Glu Val Ser
 595 600 605
 Cys Phe Glu Asn Ile Arg Ser Cys Ala Arg Gly Ala Leu Ala Leu Leu
 610 615 620
 Phe Leu Leu Gly Thr Thr Trp Ile Phe Gly Val Leu His Val Val His
 625 630 635 640
 Ala Ser Val Val Thr Ala Tyr Leu Phe Thr Val Ser Asn Ala Phe Gln
 645 650 655
 Gly Met Phe Ile Phe Leu Phe Leu Cys Val Leu Ser Arg Lys Ile Gln
 660 665 670
 Glu Glu Tyr Tyr Arg Leu Phe Lys Asn Val Pro Cys Cys Phe Gly Cys
 675 680 685
 Leu Arg
 690

<210> 50

<211> 589

<212> DNA

<213> Homo sapiens

<220>

<221> modified_base

<222> (61)

<223> a, t, c or g

<400> 50
 tggaacata tctccctca tatgaatat gatggagact acataaatat atttccaaag 60
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 gtattggtcc ctttgctttc atcatctgac aacttcttat tgaaacctca aaattatgat 180
 aattctgaag aggaggaaag agtcatatct tcagtaattt cagtctcaat gagctcaaac 240
 ccaccacat tatatgaact tgaaaaaata acattttacat taagtcacg aaaggtcaca 300
 gataggata ggagtctatg tggcattttg gaatactcac ctgataccat gaatggcagc 360
 tggctctcag agggctgtga gctgacatac tcaaatgaga cccacacctc atgccgctgt 420
 aatcacctga cacattttgc aattttgatg tctctgggc cttccattgg tattaagat 480
 tataatattc ttacaaggat cactcaacta ggaataatta ttctactgat ttgtcttgcc 540
 atatgcattt ttaccttctg gttcttcagt gaaattcaaa gcaccagga 589

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 51

ggtaatgagc tccattacag

20

<210> 52

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 52

ggagtagaaa gcgcattg

18

<210> 53

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 53

cacctgatac catgaatggc ag

22

<210> 54

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 54

cgagctcgaa ttaattcg

18

<210> 55

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 55

ggatctcctg agctcagg

18

<210> 56

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 56

cctagttgag tgatccttgt aag

23

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 57

atgagacca cacctcatgc cgctgtaatc acctgacaca ttttgcaatt

50

<210> 58

<211> 2137

<212> DNA

<213> Homo sapiens

<400> 58

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cgctaagcga ggctcctcc tcccgcagat ccgaacggcc tgggcggggg caccgccggt 120

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<210> 59

<211> 216

<212> PRT

<213> Homo sapiens

<400> 59

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Met Arg Ser Gly Cys Val Val Val His Val Trp Ile Leu Ala Gly Leu
  1              5              10              15

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Trp Leu Ala Val Ala Gly Arg Pro Leu Ala Phe Ser Asp Ala Gly Pro
          20              25              30

```

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His Val His Tyr Gly Trp Gly Asp Pro Ile Arg Leu Arg His Leu Tyr
      35              40              45

```

```

Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu Arg Ile Arg Ala
      50              55              60

```

Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser Ala His Ser Leu Leu
 65 70 75 80

Glu Ile Lys Ala Val Ala Leu Arg Thr Val Ala Ile Lys Gly Val His
 85 90 95

Ser Val Arg Tyr Leu Cys Met Gly Ala Asp Gly Lys Met Gln Gly Leu
 100 105 110

Leu Gln Tyr Ser Glu Glu Asp Cys Ala Phe Glu Glu Glu Ile Arg Pro
 115 120 125

Asp Gly Tyr Asn Val Tyr Arg Ser Glu Lys His Arg Leu Pro Val Ser
 130 135 140

Leu Ser Ser Ala Lys Gln Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu
 145 150 155 160

Pro Leu Ser His Phe Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro
 165 170 175

Glu Asp Leu Arg Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu
 180 185 190

Glu Thr Asp Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala
 195 200 205

Val Arg Ser Pro Ser Phe Glu Lys
 210 215

<210> 60

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 60

atccgcccag atggctacaa tgtgta

26

<210> 61

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 61

gcctcccgt ctcctgagc agtgccaaac agcggcagtg ta

42

<210> 62
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 62
 ccagtcgggt gacaagccca aa 22

<210> 63
 <211> 1295
 <212> DNA
 <213> Homo sapiens

<400> 63
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 cagagcagcc ggctgcgcgc cggggaagat ggcgaggagg agccgccacc gcctcctcct 120
 gctgctgctg cgctacctgg tggtcgcctt gggctatcat aaggcctatg ggttttctgc 180
 cccaaaagac caacaagtag tcacagcagt agagtaccaa gaggctatgt tagcctgcaa 240
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 tagtgcccca tctgagcaag gccaaaacct ggaagaggat acagtcactc tgggaagtatt 480
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 cagagcaaga ttccatctca aaaaataaaa taaataaata aataaatact ggtttttacc 1260
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<210> 64
 <211> 312
 <212> PRT
 <213> Homo sapiens

<400> 64
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Leu Val Val Ala Leu Gly Tyr His Lys Ala Tyr Gly Phe Ser Ala Pro
 20 25 30

Lys Asp Gln Gln Val Val Thr Ala Val Glu Tyr Gln Glu Ala Ile Leu
 35 40 45
 Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
 50 55 60
 Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
 65 70 75 80
 Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
 85 90 95
 Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser
 100 105 110
 Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
 115 120 125
 Glu Val Leu Val Ala Pro Ala Val Pro Ser Cys Glu Val Pro Ser Ser
 130 135 140
 Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys Gln Asp Lys Glu Gly
 145 150 155 160
 Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu
 165 170 175
 Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met
 180 185 190
 Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp
 195 200 205
 Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg
 210 215 220
 Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
 225 230 235 240
 Ile Ala Ala Val Val Val Val Ala Leu Val Ile Ser Val Cys Gly Leu
 245 250 255
 Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe Ser Lys Glu Thr Ser
 260 265 270
 Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr Thr Met Ser Glu Asn
 275 280 285
 Val Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Lys Ala Ala Ala
 290 295 300
 Gly Gly Ser Arg Gly Gln Glu Phe

305

310

<210> 65
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 65
 atcgttgatga agttagtgcc cc 22

<210> 66
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 66
 acctgcgata tccaacagaa ttg 23

<210> 67
 <211> 48
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 67
 ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48

<210> 68
 <211> 2639
 <212> DNA
 <213> Homo sapiens

<400> 68
 gacatcggag gtgggctagc actgaaactg cttttcaaga cgaggaagag gaggagaaag 60
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 gcatcatgct gctattcctg caaatactga agaagcatgg gatttaaata ttttacttct 180
 aaataaatga attactcaat ctctatgac catctatata tactccacct tcaaaaagta 240
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 tgaaggacat gccactccga attcatgtgc tacttggcct agctatcact acactagtac 540

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<210> 69

<211> 708

<212> PRT

<213> Homo sapiens

<400> 69

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Met Lys Asp Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile
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```

Thr Thr Leu Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu
      20                      25                      30

```

```

Cys Thr Cys Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met
      35                      40                      45

```

```

Glu Ala Ser Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro
      50                      55                      60

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Ala Arg Leu Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn
 65 70 75 80
 Ile Ala Lys Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly
 85 90 95
 Leu Asp Leu Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val
 100 105 110
 Lys Lys Met Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu
 115 120 125
 Thr Glu Leu Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu
 130 135 140
 Leu Tyr Ile Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe
 145 150 155 160
 Ile Gly Leu His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu
 165 170 175
 Gln Met Ile Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile
 180 185 190
 Leu Met Ile Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe
 195 200 205
 Lys Pro Leu Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu
 210 215 220
 Thr Glu Ile Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser
 225 230 235 240
 Ile Ser Phe Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu
 245 250 255
 Gln Lys Val Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile
 260 265 270
 Asn Arg Ile Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu
 275 280 285
 Leu Gly Ile Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala
 290 295 300
 Val Asp Asn Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro
 305 310 315 320
 Arg Leu Ser Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu
 325 330 335
 Glu Ser Leu Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly

| | | |
|---|-----|---------|
| 340 | 345 | 350 |
| Thr Ile Glu Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn | | |
| 355 | 360 | 365 |
| Pro Ile Arg Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr | | |
| 370 | 375 | 380 |
| Asn Ile Arg Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro | | |
| 385 | 390 | 395 400 |
| Glu Phe Gln Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met | | |
| 405 | 410 | 415 |
| Glu Ile Cys Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu | | |
| 420 | 425 | 430 |
| Asn Val Glu Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala | | |
| 435 | 440 | 445 |
| Glu Pro Gln Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu | | |
| 450 | 455 | 460 |
| Leu Pro Asn Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr | | |
| 465 | 470 | 475 480 |
| Leu Asp Ile Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys | | |
| 485 | 490 | 495 |
| Ile Ala Thr Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys | | |
| 500 | 505 | 510 |
| Val Asp Gly Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys | | |
| 515 | 520 | 525 |
| Ile Arg Asp Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser | | |
| 530 | 535 | 540 |
| Ser Lys Ile Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr | | |
| 545 | 550 | 555 560 |
| Glu Asn Ser His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys | | |
| 565 | 570 | 575 |
| Val Tyr Asn Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys | | |
| 580 | 585 | 590 |
| Ile Asp Ile Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn | | |
| 595 | 600 | 605 |
| Val Thr Thr Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn | | |
| 610 | 615 | 620 |

Asn Thr Thr Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile
625 630 635 640

Gly Val Ile Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp
645 650 655

Gly Gly His Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala
660 665 670

Leu Gly Glu Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys
675 680 685

Glu Lys Ser Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro
690 695 700

Thr Asn Met Ser
705

<210> 70

<211> 1305

<212> DNA

<213> Homo sapiens

<400> 70

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ttaccacgct tggtggagta gatgaggaat gggctcgtga ttatgctgac attccagcat 180
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<210> 71

<211> 259

<212> PRT

<213> Homo sapiens

<400> 71

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 Met Cys Pro Lys Gly Cys Leu Cys Ser Ser Ser Gly Gly Leu Asn Val
 35 40 45
 Thr Cys Ser Asn Ala Asn Leu Lys Glu Ile Pro Arg Asp Leu Pro Pro
 50 55 60
 Glu Thr Val Leu Leu Tyr Leu Asp Ser Asn Gln Ile Thr Ser Ile Pro
 65 70 75 80
 Asn Glu Ile Phe Lys Asp Leu His Gln Leu Arg Val Leu Asn Leu Ser
 85 90 95
 Lys Asn Gly Ile Glu Phe Ile Asp Glu His Ala Phe Lys Gly Val Ala
 100 105 110
 Glu Thr Leu Gln Thr Leu Asp Leu Ser Asp Asn Arg Ile Gln Ser Val
 115 120 125
 His Lys Asn Ala Phe Asn Asn Leu Lys Ala Arg Ala Arg Ile Ala Asn
 130 135 140
 Asn Pro Trp His Cys Asp Cys Thr Leu Gln Gln Val Leu Arg Ser Met
 145 150 155 160
 Ala Ser Asn His Glu Thr Ala His Asn Val Ile Cys Lys Thr Ser Val
 165 170 175
 Leu Asp Glu His Ala Gly Arg Pro Phe Leu Asn Ala Ala Asn Asp Ala
 180 185 190
 Asp Leu Cys Asn Leu Pro Lys Lys Thr Thr Asp Tyr Ala Met Leu Val
 195 200 205
 Thr Met Phe Gly Trp Phe Thr Met Val Ile Ser Tyr Val Val Tyr Tyr
 210 215 220
 Val Arg Gln Asn Gln Glu Asp Ala Arg Arg His Leu Glu Tyr Leu Lys
 225 230 235 240
 Ser Leu Pro Ser Arg Gln Lys Lys Ala Asp Glu Pro Asp Asp Ile Ser
 245 250 255
 Thr Val Val

<210> 72

<211> 2290

<212> DNA

<213> Homo sapiens

<400> 72

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<210> 73

<211> 620

<212> PRT

<213> Homo sapiens

<400> 73

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 Ser Ala Gln Asp Arg Ala Val Leu Cys His Arg Lys Cys Phe Val Ala
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 Val Pro Glu Gly Ile Pro Thr Glu Thr Arg Leu Leu Asp Leu Gly Lys
 65 70 75 80
 Asn Arg Ile Lys Thr Leu Asn Gln Asp Glu Phe Ala Ser Phe Pro His
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 Gly Ala Phe Asn Asn Leu Phe Asn Leu Arg Thr Leu Gly Leu Arg Ser
 115 120 125
 Asn Arg Leu Lys Leu Ile Pro Leu Gly Val Phe Thr Gly Leu Ser Asn
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 Tyr Met Phe Gln Asp Leu Tyr Asn Leu Lys Ser Leu Glu Val Gly Asp
 165 170 175
 Asn Asp Leu Val Tyr Ile Ser His Arg Ala Phe Ser Gly Leu Asn Ser
 180 185 190
 Leu Glu Gln Leu Thr Leu Glu Lys Cys Asn Leu Thr Ser Ile Pro Thr
 195 200 205
 Glu Ala Leu Ser His Leu His Gly Leu Ile Val Leu Arg Leu Arg His
 210 215 220
 Leu Asn Ile Asn Ala Ile Arg Asp Tyr Ser Phe Lys Arg Leu Tyr Arg
 225 230 235 240
 Leu Lys Val Leu Glu Ile Ser His Trp Pro Tyr Leu Asp Thr Met Thr
 245 250 255
 Pro Asn Cys Leu Tyr Gly Leu Asn Leu Thr Ser Leu Ser Ile Thr His
 260 265 270
 Cys Asn Leu Thr Ala Val Pro Tyr Leu Ala Val Arg His Leu Val Tyr
 275 280 285
 Leu Arg Phe Leu Asn Leu Ser Tyr Asn Pro Ile Ser Thr Ile Glu Gly
 290 295 300

Ser Met Leu His Glu Leu Leu Arg Leu Gln Glu Ile Gln Leu Val Gly
 305 310 315 320
 Gly Gln Leu Ala Val Val Glu Pro Tyr Ala Phe Arg Gly Leu Asn Tyr
 325 330 335
 Leu Arg Val Leu Asn Val Ser Gly Asn Gln Leu Thr Thr Leu Glu Glu
 340 345 350
 Ser Val Phe His Ser Val Gly Asn Leu Glu Thr Leu Ile Leu Asp Ser
 355 360 365
 Asn Pro Leu Ala Cys Asp Cys Arg Leu Leu Trp Val Phe Arg Arg Arg
 370 375 380
 Trp Arg Leu Asn Phe Asn Arg Gln Gln Pro Thr Cys Ala Thr Pro Glu
 385 390 395 400
 Phe Val Gln Gly Lys Glu Phe Lys Asp Phe Pro Asp Val Leu Leu Pro
 405 410 415
 Asn Tyr Phe Thr Cys Arg Arg Ala Arg Ile Arg Asp Arg Lys Ala Gln
 420 425 430
 Gln Val Phe Val Asp Glu Gly His Thr Val Gln Phe Val Cys Arg Ala
 435 440 445
 Asp Gly Asp Pro Pro Pro Ala Ile Leu Trp Leu Ser Pro Arg Lys His
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 Leu Val Ser Ala Lys Ser Asn Gly Arg Leu Thr Val Phe Pro Asp Gly
 465 470 475 480
 Thr Leu Glu Val Arg Tyr Ala Gln Val Gln Asp Asn Gly Thr Tyr Leu
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 Cys Ile Ala Ala Asn Ala Gly Gly Asn Asp Ser Met Pro Ala His Leu
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 His Val Arg Ser Tyr Ser Pro Asp Trp Pro His Gln Pro Asn Lys Thr
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 Phe Ala Phe Ile Ser Asn Gln Pro Gly Glu Gly Glu Ala Asn Ser Thr
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 Arg Ala Thr Val Pro Phe Pro Phe Asp Ile Lys Thr Leu Ile Ile Ala
 545 550 555 560
 Thr Thr Met Gly Phe Ile Ser Phe Leu Gly Val Val Leu Phe Cys Leu
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580

585

590

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<210> 74

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 74

tcacctggag cctttattgg cc

22

<210> 75

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 75

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23

<210> 76

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 76

caacagtaag tggtttgatg ctcttccaaa tctagagatt ctgatgattg
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50

52

<210> 77

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 77
 ccatgtgtct cctcctacaa ag 22

<210> 78
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 78
 gggaatagat gtgatctgat tgg 23

<210> 79
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 79
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<210> 80
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 80
 agcaaccgcc tgaagctcat cc 22

<210> 81
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 81
 aaggcgcggt gaaagatgta gacg 24

<210> 82

<211> 50
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 82
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<210> 83
 <211> 1685
 <212> DNA
 <213> Homo sapiens

<400> 83
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<210> 84
 <211> 398
 <212> PRT
 <213> Homo sapiens

<400> 84

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 Lys Cys Gln Val Lys Asp His Glu Asp Ser Ser Leu Gln Trp Ser Asn
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 Pro Ala Gln Gln Thr Leu Tyr Phe Gly Glu Lys Arg Ala Leu Arg Asp
 65 70 75 80
 Asn Arg Ile Gln Leu Val Thr Ser Thr Pro His Glu Leu Ser Ile Ser
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 Ile Ser Asn Val Ala Leu Ala Asp Glu Gly Glu Tyr Thr Cys Ser Ile
 100 105 110
 Phe Thr Met Pro Val Arg Thr Ala Lys Ser Leu Val Thr Val Leu Gly
 115 120 125
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 130 135 140
 Lys Asp Thr Ala Thr Leu Asn Cys Gln Ser Ser Gly Ser Lys Pro Ala
 145 150 155 160
 Ala Arg Leu Thr Trp Arg Lys Gly Asp Gln Glu Leu His Gly Glu Pro
 165 170 175
 Thr Arg Ile Gln Glu Asp Pro Asn Gly Lys Thr Phe Thr Val Ser Ser
 180 185 190
 Ser Val Thr Phe Gln Val Thr Arg Glu Asp Asp Gly Ala Ser Ile Val
 195 200 205
 Cys Ser Val Asn His Glu Ser Leu Lys Gly Ala Asp Arg Ser Thr Ser
 210 215 220
 Gln Arg Ile Glu Val Leu Tyr Thr Pro Thr Ala Met Ile Arg Pro Asp
 225 230 235 240
 Pro Pro His Pro Arg Glu Gly Gln Lys Leu Leu Leu His Cys Glu Gly
 245 250 255
 Arg Gly Asn Pro Val Pro Gln Gln Tyr Leu Trp Glu Lys Glu Gly Ser
 260 265 270
 Val Pro Pro Leu Lys Met Thr Gln Glu Ser Ala Leu Ile Phe Pro Phe
 275 280 285

Leu Asn Lys Ser Asp Ser Gly Thr Tyr Gly Cys Thr Ala Thr Ser Asn
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Met Gly Ser Tyr Lys Ala Tyr Tyr Thr Leu Asn Val Asn Asp Pro Ser
 305 310 315 320

Pro Val Pro Ser Ser Ser Ser Thr Tyr His Ala Ile Ile Gly Gly Ile
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Val Ala Phe Ile Val Phe Leu Leu Leu Ile Met Leu Ile Phe Leu Gly
 340 345 350

His Tyr Leu Ile Arg His Lys Gly Thr Tyr Leu Thr His Glu Ala Lys
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Gly Ser Asp Asp Ala Pro Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu
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Gly Gly Gln Ser Gly Gly Asp Asp Lys Lys Glu Tyr Phe Ile
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<210> 85

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 85

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22

<210> 86

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 86

aacctggaat gtcaccgagc tg

22

<210> 87

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 87

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26

<210> 88

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 88

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<210> 89

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 89

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<210> 90

<211> 2755

<212> DNA

<213> Homo sapiens

<400> 90

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<210> 91

<211> 696

<212> PRT

<213> Homo sapiens

<400> 91

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          20                      25                      30

```

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Glu Ile Glu Gly Asp Leu His Val Asp Cys Glu Lys Lys Gly Phe Thr
          35                      40                      45

```

```

Ser Leu Gln Arg Phe Thr Ala Pro Thr Ser Gln Phe Tyr His Leu Phe
          50                      55                      60

```

```

Leu His Gly Asn Ser Leu Thr Arg Leu Phe Pro Asn Glu Phe Ala Asn
          65                      70                      75                      80

```

```

Phe Tyr Asn Ala Val Ser Leu His Met Glu Asn Asn Gly Leu His Glu
          85                      90                      95

```

Ile Val Pro Gly Ala Phe Leu Gly Leu Gln Leu Val Lys Arg Leu His
 100 105 110
 Ile Asn Asn Asn Lys Ile Lys Ser Phe Arg Lys Gln Thr Phe Leu Gly
 115 120 125
 Leu Asp Asp Leu Glu Tyr Leu Gln Ala Asp Phe Asn Leu Leu Arg Asp
 130 135 140
 Ile Asp Pro Gly Ala Phe Gln Asp Leu Asn Lys Leu Glu Val Leu Ile
 145 150 155 160
 Leu Asn Asp Asn Leu Ile Ser Thr Leu Pro Ala Asn Val Phe Gln Tyr
 165 170 175
 Val Pro Ile Thr His Leu Asp Leu Arg Gly Asn Arg Leu Lys Thr Leu
 180 185 190
 Pro Tyr Glu Glu Val Leu Glu Gln Ile Pro Gly Ile Ala Glu Ile Leu
 195 200 205
 Leu Glu Asp Asn Pro Trp Asp Cys Thr Cys Asp Leu Leu Ser Leu Lys
 210 215 220
 Glu Trp Leu Glu Asn Ile Pro Lys Asn Ala Leu Ile Gly Arg Val Val
 225 230 235 240
 Cys Glu Ala Pro Thr Arg Leu Gln Gly Lys Asp Leu Asn Glu Thr Thr
 245 250 255
 Glu Gln Asp Leu Cys Pro Leu Lys Asn Arg Val Asp Ser Ser Leu Pro
 260 265 270
 Ala Pro Pro Ala Gln Glu Glu Thr Phe Ala Pro Gly Pro Leu Pro Thr
 275 280 285
 Pro Phe Lys Thr Asn Gly Gln Glu Asp His Ala Thr Pro Gly Ser Ala
 290 295 300
 Pro Asn Gly Gly Thr Lys Ile Pro Gly Asn Trp Gln Ile Lys Ile Arg
 305 310 315 320
 Pro Thr Ala Ala Ile Ala Thr Gly Ser Ser Arg Asn Lys Pro Leu Ala
 325 330 335
 Asn Ser Leu Pro Cys Pro Gly Gly Cys Ser Cys Asp His Ile Pro Gly
 340 345 350
 Ser Gly Leu Lys Met Asn Cys Asn Asn Arg Asn Val Ser Ser Leu Ala
 355 360 365
 Asp Leu Lys Pro Lys Leu Ser Asn Val Gln Glu Leu Phe Leu Arg Asp
 370 375 380

Asn Lys Ile His Ser Ile Arg Lys Ser His Phe Val Asp Tyr Lys Asn
 385 390 395 400
 Leu Ile Leu Leu Asp Leu Gly Asn Asn Asn Ile Ala Thr Val Glu Asn
 405 410 415
 Asn Thr Phe Lys Asn Leu Leu Asp Leu Arg Trp Leu Tyr Met Asp Ser
 420 425 430
 Asn Tyr Leu Asp Thr Leu Ser Arg Glu Lys Phe Ala Gly Leu Gln Asn
 435 440 445
 Leu Glu Tyr Leu Asn Val Glu Tyr Asn Ala Ile Gln Leu Ile Leu Pro
 450 455 460
 Gly Thr Phe Asn Ala Met Pro Lys Leu Arg Ile Leu Ile Leu Asn Asn
 465 470 475 480
 Asn Leu Leu Arg Ser Leu Pro Val Asp Val Phe Ala Gly Val Ser Leu
 485 490 495
 Ser Lys Leu Ser Leu His Asn Asn Tyr Phe Met Tyr Leu Pro Val Ala
 500 505 510
 Gly Val Leu Asp Gln Leu Thr Ser Ile Ile Gln Ile Asp Leu His Gly
 515 520 525
 Asn Pro Trp Glu Cys Ser Cys Thr Ile Val Pro Phe Lys Gln Trp Ala
 530 535 540
 Glu Arg Leu Gly Ser Glu Val Leu Met Ser Asp Leu Lys Cys Glu Thr
 545 550 555 560
 Pro Val Asn Phe Phe Arg Lys Asp Phe Met Leu Leu Ser Asn Asp Glu
 565 570 575
 Ile Cys Pro Gln Leu Tyr Ala Arg Ile Ser Pro Thr Leu Thr Ser His
 580 585 590
 Ser Lys Asn Ser Thr Gly Leu Ala Glu Thr Gly Thr His Ser Asn Ser
 595 600 605
 Tyr Leu Asp Thr Ser Arg Val Ser Ile Ser Val Leu Val Pro Gly Leu
 610 615 620
 Leu Leu Val Phe Val Thr Ser Ala Phe Thr Val Val Gly Met Leu Val
 625 630 635 640
 Phe Ile Leu Arg Asn Arg Lys Arg Ser Lys Arg Arg Asp Ala Asn Ser
 645 650 655
 Ser Ala Ser Glu Ile Asn Ser Leu Gln Thr Val Cys Asp Ser Ser Tyr

660

665

670

Trp His Asn Gly Pro Tyr Asn Ala Asp Gly Ala His Arg Val Tyr Asp
 675 680 685

Cys Gly Ser His Ser Leu Ser Asp
 690 695

<210> 92

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 92

gttggatctg ggcaacaata ac

22

<210> 93

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 93

attgttgatgc aggctgagtt taag

24

<210> 94

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 94

ggtggctata catggatagc aattacctgg acacgctgtc ccggg

45

<210> 95

<211> 2226

<212> DNA

<213> Homo sapiens

<400> 95

agtcgactgc gtcccctgta cccggcgcca gctgtgttcc tgaccccaga ataactcagg 60
 gctgcaccgg gcctggcagc gctccgcaca catttcctgt cgcggcctaa gggaaactgt 120
 tggccgctgg gcccgcgggg ggattcttgg cagttggggg gtccgtcggg agcgagggcg 180

```

gaggggaagg gaggggaac cgggttgggg aagccagctg tagagggcgg tgaccgcgct 240
ccagacacag ctctgcgtcc tcgagcggga cagatccaag ttgggagcag ctctgcgtgc 300
ggggcctcag agaatgaggc cggcgttcgc cctgtgcctc ctctggcagg cgctctggcc 360
cgggcccggc ggccggcgaac accccactgc cgaccgtgct ggctgctcgg cctcgggggc 420
ctgctacagc ctgcaccacg ctaccatgaa gcgcagggcg gcgaggagg cctgcatact 480
gcgaggtggg gcgctcagca cctgctgctg gggcgccgag ctgcgcgctg tgctcgcgct 540
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aatttacatt aaaaaataat ttctacaaa atggaaagga aatgttctat gttgttcagg 2160
ctaggagtat attggttcga aatcccaggg aaaaaataa aaataaaaaa ttaaaggatt 2220
gttgat 2226

```

<210> 96

<211> 490

<212> PRT

<213> Homo sapiens

<400> 96

```

Met Arg Pro Ala Phe Ala Leu Cys Leu Leu Trp Gln Ala Leu Trp Pro
  1             5             10             15

```

```

Gly Pro Gly Gly Gly Glu His Pro Thr Ala Asp Arg Ala Gly Cys Ser
          20             25             30

```

```

Ala Ser Gly Ala Cys Tyr Ser Leu His His Ala Thr Met Lys Arg Gln
          35             40             45

```

```

Ala Ala Glu Glu Ala Cys Ile Leu Arg Gly Gly Ala Leu Ser Thr Val
          50             55             60

```

Arg Ala Gly Ala Glu Leu Arg Ala Val Leu Ala Leu Leu Arg Ala Gly
 65 70 75 80
 Pro Gly Pro Gly Gly Gly Ser Lys Asp Leu Leu Phe Trp Val Ala Leu
 85 90 95
 Glu Arg Arg Arg Ser His Cys Thr Leu Glu Asn Glu Pro Leu Arg Gly
 100 105 110
 Phe Ser Trp Leu Ser Ser Asp Pro Gly Gly Leu Glu Ser Asp Thr Leu
 115 120 125
 Gln Trp Val Glu Glu Pro Gln Arg Ser Cys Thr Ala Arg Arg Cys Ala
 130 135 140
 Val Leu Gln Ala Thr Gly Gly Val Glu Pro Ala Gly Trp Lys Glu Met
 145 150 155 160
 Arg Cys His Leu Arg Ala Asn Gly Tyr Leu Cys Lys Tyr Gln Phe Glu
 165 170 175
 Val Leu Cys Pro Ala Pro Arg Pro Gly Ala Ala Ser Asn Leu Ser Tyr
 180 185 190
 Arg Ala Pro Phe Gln Leu His Ser Ala Ala Leu Asp Phe Ser Pro Pro
 195 200 205
 Gly Thr Glu Val Ser Ala Leu Cys Arg Gly Gln Leu Pro Ile Ser Val
 210 215 220
 Thr Cys Ile Ala Asp Glu Ile Gly Ala Arg Trp Asp Lys Leu Ser Gly
 225 230 235 240
 Asp Val Leu Cys Pro Cys Pro Gly Arg Tyr Leu Arg Ala Gly Lys Cys
 245 250 255
 Ala Glu Leu Pro Asn Cys Leu Asp Asp Leu Gly Gly Phe Ala Cys Glu
 260 265 270
 Cys Ala Thr Gly Phe Glu Leu Gly Lys Asp Gly Arg Ser Cys Val Thr
 275 280 285
 Ser Gly Glu Gly Gln Pro Thr Leu Gly Gly Thr Gly Val Pro Thr Arg
 290 295 300
 Arg Pro Pro Ala Thr Ala Thr Ser Pro Val Pro Gln Arg Thr Trp Pro
 305 310 315 320
 Ile Arg Val Asp Glu Lys Leu Gly Glu Thr Pro Leu Val Pro Glu Gln
 325 330 335
 Asp Asn Ser Val Thr Ser Ile Pro Glu Ile Pro Arg Trp Gly Ser Gln

| | | |
|---|-----|-----|
| 340 | 345 | 350 |
| Ser Thr Met Ser Thr Leu Gln Met Ser Leu Gln Ala Glu Ser Lys Ala | | |
| 355 | 360 | 365 |
| Thr Ile Thr Pro Ser Gly Ser Val Ile Ser Lys Phe Asn Ser Thr Thr | | |
| 370 | 375 | 380 |
| Ser Ser Ala Thr Pro Gln Ala Phe Asp Ser Ser Ser Ala Val Val Phe | | |
| 385 | 390 | 395 |
| Ile Phe Val Ser Thr Ala Val Val Val Leu Val Ile Leu Thr Met Thr | | |
| | 405 | 410 |
| Val Leu Gly Leu Val Lys Leu Cys Phe His Glu Ser Pro Ser Ser Gln | | |
| | 420 | 425 |
| Pro Arg Lys Glu Ser Met Gly Pro Pro Gly Leu Glu Ser Asp Pro Glu | | |
| | 435 | 440 |
| Pro Ala Ala Leu Gly Ser Ser Ser Ala His Cys Thr Asn Asn Gly Val | | |
| | 450 | 455 |
| Lys Val Gly Asp Cys Asp Leu Arg Asp Arg Ala Glu Gly Ala Leu Leu | | |
| 465 | 470 | 475 |
| Ala Glu Ser Pro Leu Gly Ser Ser Asp Ala | | |
| | 485 | 490 |

<210> 97

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 97

tggaaggaga tgcgatgccca cctg

24

<210> 98

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 98

tgaccagtgg ggaaggacag

20

<210> 99
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 99
 acagagcaga gggcgccttg 20

<210> 100
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 100
 tcagggacaa gtggtgtctc tccc 24

<210> 101
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 101
 tcagggaagg agtgtgcagt tctg 24

<210> 102
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 102
 acagctcccc atctcagtta cttgcatcgc ggaacgaaatc ggcgctcgct 50

<210> 103
 <211> 2026
 <212> DNA
 <213> Homo sapiens

<400> 103

```

cggacgcgtg ggattcagca gtggcctgtg gctgccagag cagctcctca ggggaaacta 60
agcgtcgagt cagacggcac cataatcgcc tttaaaagtg cctccgccct gccggccgcg 120
tataccccgg ctacctgggc cgccccgcgg cggtgcgcgc gtgagagggg gcgcgcgggc 180
agccgagcgc cgggtgtgagc cagcgtctgt gccagtgtga gcggcggtgt gagecgcgtg 240
ggtgcggagg ggctgtgtgt ccggcgcgcg cgccgtgggg tgcaaaccce gagecgtctac 300
gctgccatga ggggcgcgaa cgcctgggcg ccactctgcc tgetgctggc tgccgccacc 360
cagctctcgc ggcagcagtc ccagagaga cctgttttca catgtggtgg cattcttact 420
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tgtacttgga aaatcacagt tcccgaagg aaagtagtgc ttctcaattt ccgattcata 540
gacctcgaga gtgacaacct gtgccgctat gactttgtgg atgtgtacaa tggccatgcc 600
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ggcaacaaga tgatggtgca gatgatttct gatgccaca cagctggcaa tggcttcatg 720
gccatgttct ccgctgctga accaaacgaa agaggggatc agtattgtgg aggactcctt 780
gacagacctt ccggctcttt taaaaccccc aactggccag accgggatta cctgcagga 840
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aaagtttgatg tggagcgaga taactactgc cgatatgatt atgtggctgt gtttaatggc 960
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caaaagtgtg gacggacggg gactctggag ggcaattatt gttcaagtga ctttgtatta 1260
gccggcactg ttatcacaa ccatcactcgc gatgggagtt tgcacgccac agtctcgatc 1320
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aggctgactg tcgtctgcaa gcagtgcct ctcctcagaa gaggtctaaa ttacattatt 1440
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ttcaagacca agaatcagaa gtcctggat gccttaaaaa ataagcaatg ttaacagtga 1560
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ctaaaagtgt caagcgttga cagcttgga gcgtttattt atacatctct gtaaaaggat 1860
attttagaat tgagttgtgt gaagatgtca aaaaaagatt ttagaagtgc aatatttata 1920
gtgttatttg tttcaccttc aagcctttgc cctgaggtgt tacaatcttg tcttgcgttt 1980
tctaaatcaa tgcttaataa aatattttta aaggaaaaaa aaaaaa 2026

```

<210> 104

<211> 415

<212> PRT

<213> Homo sapiens

<400> 104

```

Met Arg Gly Ala Asn Ala Trp Ala Pro Leu Cys Leu Leu Leu Ala Ala
  1             5             10             15

```

```

Ala Thr Gln Leu Ser Arg Gln Gln Ser Pro Glu Arg Pro Val Phe Thr
      20             25             30

```

```

Cys Gly Gly Ile Leu Thr Gly Glu Ser Gly Phe Ile Gly Ser Glu Gly
      35             40             45

```

```

Phe Pro Gly Val Tyr Pro Pro Asn Ser Lys Cys Thr Trp Lys Ile Thr
      50             55             60

```

Val Pro Glu Gly Lys Val Val Val Leu Asn Phe Arg Phe Ile Asp Leu
 65 70 75 80
 Glu Ser Asp Asn Leu Cys Arg Tyr Asp Phe Val Asp Val Tyr Asn Gly
 85 90 95
 His Ala Asn Gly Gln Arg Ile Gly Arg Phe Cys Gly Thr Phe Arg Pro
 100 105 110
 Gly Ala Leu Val Ser Ser Gly Asn Lys Met Met Val Gln Met Ile Ser
 115 120 125
 Asp Ala Asn Thr Ala Gly Asn Gly Phe Met Ala Met Phe Ser Ala Ala
 130 135 140
 Glu Pro Asn Glu Arg Gly Asp Gln Tyr Cys Gly Gly Leu Leu Asp Arg
 145 150 155 160
 Pro Ser Gly Ser Phe Lys Thr Pro Asn Trp Pro Asp Arg Asp Tyr Pro
 165 170 175
 Ala Gly Val Thr Cys Val Trp His Ile Val Ala Pro Lys Asn Gln Leu
 180 185 190
 Ile Glu Leu Lys Phe Glu Lys Phe Asp Val Glu Arg Asp Asn Tyr Cys
 195 200 205
 Arg Tyr Asp Tyr Val Ala Val Phe Asn Gly Gly Glu Val Asn Asp Ala
 210 215 220
 Arg Arg Ile Gly Lys Tyr Cys Gly Asp Ser Pro Pro Ala Pro Ile Val
 225 230 235 240
 Ser Glu Arg Asn Glu Leu Leu Ile Gln Phe Leu Ser Asp Leu Ser Leu
 245 250 255
 Thr Ala Asp Gly Phe Ile Gly His Tyr Ile Phe Arg Pro Lys Lys Leu
 260 265 270
 Pro Thr Thr Thr Glu Gln Pro Val Thr Thr Thr Phe Pro Val Thr Thr
 275 280 285
 Gly Leu Lys Pro Thr Val Ala Leu Cys Gln Gln Lys Cys Arg Arg Thr
 290 295 300
 Gly Thr Leu Glu Gly Asn Tyr Cys Ser Ser Asp Phe Val Leu Ala Gly
 305 310 315 320
 Thr Val Ile Thr Thr Ile Thr Arg Asp Gly Ser Leu His Ala Thr Val
 325 330 335
 Ser Ile Ile Asn Ile Tyr Lys Glu Gly Asn Leu Ala Ile Gln Gln Ala

| | | |
|---|-----|-----|
| 340 | 345 | 350 |
| Gly Lys Asn Met Ser Ala Arg Leu Thr Val Val Cys Lys Gln Cys Pro | | |
| 355 | 360 | 365 |
| Leu Leu Arg Arg Gly Leu Asn Tyr Ile Ile Met Gly Gln Val Gly Glu | | |
| 370 | 375 | 380 |
| Asp Gly Arg Gly Lys Ile Met Pro Asn Ser Phe Ile Met Met Phe Lys | | |
| 385 | 390 | 395 |
| Thr Lys Asn Gln Lys Leu Leu Asp Ala Leu Lys Asn Lys Gln Cys | | |
| 405 | 410 | 415 |

<210> 105

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 105

ccgattcata gacctcgaga gt

22

<210> 106

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 106

gtcaaggagt cctccacaat ac

22

<210> 107

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 107

gtgtacaatg gccatgccaa tggccagcgc attggccgct tctgt

45

<210> 108

<211> 1838

<212> DNA

<213> Homo sapiens

<400> 108

```

cggacgcgtg ggccgacgcg tgggcggccc acggcgcccc cgggctgggg cggctcgttc 60
ttccttctcc gtggcctacg agggteccca gectgggtaa agatggcccc atggcccccg 120
aagggcctag tcccagctgt gctctggggc ctcagcctct tcttcaacct cccaggacct 180
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aactttggag gtggaAACac tgccctgggag gaagagaatt tgtccaaata caaagacagt 360
gagacccgcc tggtagaggt gctggagggt gtgtgcagca agtcagactt cgagtgcac 420
cgctgctgg agctgagtga ggagctggtg gagagctggt ggtttcacaA gcagcaggag 480
gccccggacc tcttcagtg gctgtgctca gattccctga agctctgtg ccccgaggc 540
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ggtcttggaa agttaaaaaa aaaaaaaaaa aaaaaaaa 1838

```

<210> 109

<211> 420

<212> PRT

<213> Homo sapiens

<400> 109

```

Met Ala Pro Trp Pro Pro Lys Gly Leu Val Pro Ala Val Leu Trp Gly
  1             5             10            15

Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln Pro Ser
      20             25            30

Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro Cys His Thr
      35             40            45

Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu Glu Arg Thr Ile
      50             55            60

```

Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Glu Asn Leu
 65 70 75 80
 Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu Val Glu Val Leu Glu Gly
 85 90 95
 Val Cys Ser Lys Ser Asp Phe Glu Cys His Arg Leu Leu Glu Leu Ser
 100 105 110
 Glu Glu Leu Val Glu Ser Trp Trp Phe His Lys Gln Gln Glu Ala Pro
 115 120 125
 Asp Leu Phe Gln Trp Leu Cys Ser Asp Ser Leu Lys Leu Cys Cys Pro
 130 135 140
 Ala Gly Thr Phe Gly Pro Ser Cys Leu Pro Cys Pro Gly Gly Thr Glu
 145 150 155 160
 Arg Pro Cys Gly Gly Tyr Gly Gln Cys Glu Gly Glu Gly Thr Arg Gly
 165 170 175
 Gly Ser Gly His Cys Asp Cys Gln Ala Gly Tyr Gly Gly Glu Ala Cys
 180 185 190
 Gly Gln Cys Gly Leu Gly Tyr Phe Glu Ala Glu Arg Asn Ala Ser His
 195 200 205
 Leu Val Cys Ser Ala Cys Phe Gly Pro Cys Ala Arg Cys Ser Gly Pro
 210 215 220
 Glu Glu Ser Asn Cys Leu Gln Cys Lys Lys Gly Trp Ala Leu His His
 225 230 235 240
 Leu Lys Cys Val Asp Ile Asp Glu Cys Gly Thr Glu Gly Ala Asn Cys
 245 250 255
 Gly Ala Asp Gln Phe Cys Val Asn Thr Glu Gly Ser Tyr Glu Cys Arg
 260 265 270
 Asp Cys Ala Lys Ala Cys Leu Gly Cys Met Gly Ala Gly Pro Gly Arg
 275 280 285
 Cys Lys Lys Cys Ser Pro Gly Tyr Gln Gln Val Gly Ser Lys Cys Leu
 290 295 300
 Asp Val Asp Glu Cys Glu Thr Glu Val Cys Pro Gly Glu Asn Lys Gln
 305 310 315 320
 Cys Glu Asn Thr Glu Gly Gly Tyr Arg Cys Ile Cys Ala Glu Gly Tyr
 325 330 335
 Lys Gln Met Glu Gly Ile Cys Val Lys Glu Gln Ile Pro Glu Ser Ala
 340 345 350

Gly Phe Phe Ser Glu Met Thr Glu Asp Glu Leu Val Val Leu Gln Gln
 355 360 365

Met Phe Phe Gly Ile Ile Ile Cys Ala Leu Ala Thr Leu Ala Ala Lys
 370 375 380

Gly Asp Leu Val Phe Thr Ala Ile Phe Ile Gly Ala Val Ala Ala Met
 385 390 395 400

Thr Gly Tyr Trp Leu Ser Glu Arg Ser Asp Arg Val Leu Glu Gly Phe
 405 410 415

Ile Lys Gly Arg
 420

<210> 110

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 110

cctggctatc agcaggtggg ctccaagtgt ctcgatgtgg atgagtgtga 50

<210> 111

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 111

attctgcgtg aacactgagg gc 22

<210> 112

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 112

atctgcttgt agccctcggc ac 22

<210> 113

<211> 1616
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (1461)
 <223> a, t, c or g

<400> 113
 tgagaccctc ctgcagcctt ctcaagggac agccccactc tgcctcttgc tectccaggg 60
 cagcaccatg cagccctgt ggctctgctg ggcaactctg gtgttgcccc tggccagccc 120
 cggggccgcc ctgaccgggg agcagctcct gggcagcctg ctgcggcage tgcagctcaa 180
 agaggtgccc accctggaca gggccgacat ggaggagctg gtcacccccca cccacgtgag 240
 ggcccagtac gtggccctgc tgcagcgcag ccacgggggac cgctcccgcg gaaagagggt 300
 cagccagagc ttccgagagg tggccggcag gttcctggcg ttggaggcca gcacacacct 360
 gctgggtgttc ggcatggagc agcggctgcc gcccacacagc gagctggtgc aggcctgtgt 420
 ggggctcttc caggagccgg tccccaggc cgcgctgcac aggcacgggc ggctgtcccc 480
 gcgcagcgcc cgggcccggg tgaccgtcga gtggctgcgc gtccgcgacg acggctccaa 540
 ccgcacctcc ctcatcgact ccaggctggt gtccgtccac gagagcggct ggaaggcctt 600
 cgacgtgacc gaggcctga acttctggca gcagctgagc cggccccggc agcctgtgt 660
 gctacaggtg tcggtgcaga gggagcatct gggcccgtg gcgtccggcg cccacaagct 720
 ggtccgcttt gcctcgcagg gggcgccagc cgggcttggg gagccccagc tggagctgca 780
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 cgagaactgg gtgctggagc cccgggctt cctggcttat gagtgtgtgg gcacctgcc 960
 gcagcccccg gaggccttg ccttcaagtg gccgtttctg gggcctcgac agtgcctgc 1020
 ctcgagact gactcgtgc ccatgatcgt cagcatcaag gagggaggca ggaccaggcc 1080
 ccaggtggtc agcctgccc acatgagggt gcagaagtgc agctgtgcct cggatggtgc 1140
 gctcgtgcca aggaggtcc agccataggc gctagtgtg gccatcgagg gacttgactt 1200
 gtgtgtgttt ctgaagtgtt cgagggtacc aggagagctg gcgatgactg aactgctgat 1260
 ggacaaatgc tctgtgctct ctagtggagc ctgaatttgc ttcctctgac aagttacctc 1320
 acctaatatt tcttctcag gaatgagaat ctttggccac tggagagccc ttgctcagtt 1380
 ttctctatct ttattattca ctgcactata ttctaagcac ttacatgtgg agatactgta 1440
 acctgagggc agaaagccca ntgtgtcatt gtttacttgt cctgtcactg gatctgggct 1500
 aaagtctccc accaccactc tggacctaa acctgggggt aagtgtgggt tgtgcatccc 1560
 caatccagat aataaagact ttgtaaaaca tgaataaaac acattttatt ctaaaa 1616

<210> 114
 <211> 366
 <212> PRT
 <213> Homo sapiens

<400> 114
 Met Gln Pro Leu Trp Leu Cys Trp Ala Leu Trp Val Leu Pro Leu Ala
 1 5 10 15
 Ser Pro Gly Ala Ala Leu Thr Gly Glu Gln Leu Leu Gly Ser Leu Leu
 20 25 30
 Arg Gln Leu Gln Leu Lys Glu Val Pro Thr Leu Asp Arg Ala Asp Met
 35 40 45

Glu Glu Leu Val Ile Pro Thr His Val Arg Ala Gln Tyr Val Ala Leu
 50 55 60
 Leu Gln Arg Ser His Gly Asp Arg Ser Arg Gly Lys Arg Phe Ser Gln
 65 70 75 80
 Ser Phe Arg Glu Val Ala Gly Arg Phe Leu Ala Leu Glu Ala Ser Thr
 85 90 95
 His Leu Leu Val Phe Gly Met Glu Gln Arg Leu Pro Pro Asn Ser Glu
 100 105 110
 Leu Val Gln Ala Val Leu Arg Leu Phe Gln Glu Pro Val Pro Lys Ala
 115 120 125
 Ala Leu His Arg His Gly Arg Leu Ser Pro Arg Ser Ala Arg Ala Arg
 130 135 140
 Val Thr Val Glu Trp Leu Arg Val Arg Asp Asp Gly Ser Asn Arg Thr
 145 150 155 160
 Ser Leu Ile Asp Ser Arg Leu Val Ser Val His Glu Ser Gly Trp Lys
 165 170 175
 Ala Phe Asp Val Thr Glu Ala Val Asn Phe Trp Gln Gln Leu Ser Arg
 180 185 190
 Pro Arg Gln Pro Leu Leu Leu Gln Val Ser Val Gln Arg Glu His Leu
 195 200 205
 Gly Pro Leu Ala Ser Gly Ala His Lys Leu Val Arg Phe Ala Ser Gln
 210 215 220
 Gly Ala Pro Ala Gly Leu Gly Glu Pro Gln Leu Glu Leu His Thr Leu
 225 230 235 240
 Asp Leu Gly Asp Tyr Gly Ala Gln Gly Asp Cys Asp Pro Glu Ala Pro
 245 250 255
 Met Thr Glu Gly Thr Arg Cys Cys Arg Gln Glu Met Tyr Ile Asp Leu
 260 265 270
 Gln Gly Met Lys Trp Ala Glu Asn Trp Val Leu Glu Pro Pro Gly Phe
 275 280 285
 Leu Ala Tyr Glu Cys Val Gly Thr Cys Arg Gln Pro Pro Glu Ala Leu
 290 295 300
 Ala Phe Lys Trp Pro Phe Leu Gly Pro Arg Gln Cys Ile Ala Ser Glu
 305 310 315 320
 Thr Asp Ser Leu Pro Met Ile Val Ser Ile Lys Glu Gly Gly Arg Thr
 325 330 335

Arg Pro Gln Val Val Ser Leu Pro Asn Met Arg Val Gln Lys Cys Ser
 340 345 350

Cys Ala Ser Asp Gly Ala Leu Val Pro Arg Arg Leu Gln Pro
 355 360 365

<210> 115

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 115

aggactgccca taacttgccct g

21

<210> 116

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 116

ataggagttg aagcagcgct gc

22

<210> 117

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 117

tgtgtggaca tagacgagtg ccgctaccgc tactgccagc accgc

45

<210> 118

<211> 1857

<212> DNA

<213> Homo sapiens

<400> 118

gtctgttccc aggagtcctt cggcggctgt tgtgtcagtg gctgatcgc gatggggaca 60
 aaggcgcaag tcgagaggaa actgttgtgc ctcttcatat tggcgatcct gttgtgtcc 120
 ctggcattgg gcagtgttac agtgcactct tctgaacctg aagtcagaat tcttgagaat 180

```

aatcctgtga agttgtcctg tgectacteg ggcttttctt ctccccgtgt ggagtgggaag 240
tttgaccaag gagacaccac cagactcgtt tgctataata acaagatcac agcttcctat 300
gaggaccggg tgaccttctt gccaaactgg atcaccttca agtccgtgac acgggaagac 360
actgggacat acacttgtat ggtctctgag gaaggcggca acagctatgg ggaggtcaag 420
gtcaagctca tcgtgcttgt gcctccatcc aagcctacag ttaacatccc ctctctgcc 480
accattggga accgggcagt gctgacatgc tcagaacaag atggttcccc acctctgaa 540
tacacctggg tcaaagatgg gatagtgat cctacgaatc ccaaaagcac cctgaccttc 600
agcaactctt cctatgtcct gaatcccaca acaggagagc tggctcttga tccccgtca 660
gcctctgata ctggagaata cagctgtgag gcacggaatg ggtatgggac acccatgact 720
tcaaagtctg tgcgcatgga agctgtggag cggaatgtgg gggcatcgtt ggcagccgtc 780
cttgtaaccc tgattctcct gggaaatctt gtttttggca tctggtttgc ctatagccga 840
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agtgcgccga gtgaaggaga attcaaacag acctcgtcat tcctgggtgt agcctgggtc 960
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tctagagcgg gaattagagg ctagagcggc tgaaatggtt gtttgggtgat gacactggg 1440
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accgctgctc taaagaaaag aaaactggag gctgggcgca gtggctcacg cctgtaatcc 1680
cagaggctga ggcaggcgga tcacctgagg tcgggagttc gggatcagcc tgaccaacat 1740
ggagaaaccc tactggaaat acaaagttag ccaggcatgg tgggtgcatgc ctgtagtccc 1800
agctgctcag gagcctggca acaagagcaa aactccagct caaaaaaaaaa aaaaaaa 1857

```

<210> 119

<211> 299

<212> PRT

<213> Homo sapiens

<400> 119

```

Met Gly Thr Lys Ala Gln Val Glu Arg Lys Leu Leu Cys Leu Phe Ile
  1             5             10             15

```

```

Leu Ala Ile Leu Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His
      20             25             30

```

```

Ser Ser Glu Pro Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu
      35             40             45

```

```

Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe
      50             55             60

```

```

Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr
      65             70             75             80

```

```

Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe
      85             90             95

```

Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser
 100 105 110
 Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val
 115 120 125
 Leu Val Pro Pro Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala Thr
 130 135 140
 Ile Gly Asn Arg Ala Val Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro
 145 150 155 160
 Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn
 165 170 175
 Pro Lys Ser Thr Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro
 180 185 190
 Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly
 195 200 205
 Glu Tyr Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser
 210 215 220
 Asn Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val
 225 230 235 240
 Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly
 245 250 255
 Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly
 260 265 270
 Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala Arg Ser Glu
 275 280 285
 Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
 290 295

<210> 120

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 120

tcgcggagct gtgttctgtt tccc

24

<210> 121

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 121

tgatcgcgat ggggacaaag gcgcaagctc gagaggaaac tgttgtgcct 50

<210> 122

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 122

acacctgggtt caaagatggg 20

<210> 123

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 123

taggaagagt tgctgaaggc acgg 24

<210> 124

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 124

ttgccttact caggtgctac 20

<210> 125

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 125

actcagcagtg ggtaggaaaag

20

<210> 126

<211> 1210

<212> DNA

<213> Homo sapiens

<400> 126

```

cagcgcgtgg ccggcgccgc tgtggggaca gcatgagcgg cggttggatg ggcaggttg 60
gagcgtggcg aacaggggct ctgggcctgg cgtgctgct gctgctcggc ctcgactag 120
gctggaggc cgcgcgagc ccgctttcca ccccgacctc tgcccaggcc gcaggcccca 180
gctcaggctc gtgcccaccc accaagtcc agtgccgcac cagtggctta tgcgtgcccc 240
tcacctggcg ctgcgacagg gacttggact gcagcgatgg cagcgatgag gaggagtgc 300
ggattgagcc atgtaccag aaagggcaat gccaccgcc cctggcctc cctgcccc 360
gcaccggcgt cagtactgc tctgggggaa ctgacaagaa actgcgcaac tgcagccgcc 420
tggcctgcct agcaggcgag ctccgttgca cgtgagcga tgactgcatt cactcacgt 480
ggcgtgcga cggccacca gactgtccc actccagcga cgagctcggc tgtggaacca 540
atgagatcct cccggaagg gatgccaaa ccatggggcc cctgtgacc ctggagagt 600
tcacctctct caggaatgcc acaaccatgg ggcctctgt gacctggag agtgcccc 660
ctgtcgggaa tgccacatcc tctctgccc gagaccagtc tggaagccca actgcctat 720
gggttattgc agctgctgc gtgctcagt caagcctgg caccgccacc ctctccttt 780
tgtcctggct ccgagcccag gagcgctcc gccactggg gttactggg gccatgaag 840
agtccctgct gctgtcagaa cagaagacct cgtgccctg aggacaagca cttgccacca 900
ccgtcactca gccctgggcg tagccggaca ggaggagagc agtgatgcgg atgggtacc 960
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agctaggatg gggaacctgc cacagccaga actgaggggc tggcccagg cagctccag 1140
ggggtagaac ggcctgtgc ttaagacact cctgctgcc ccgtctgagg gtggcgatta 1200
aagttgcttc                                     1210

```

<210> 127

<211> 282

<212> PRT

<213> Homo sapiens

<400> 127

```

Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
  1             5             10             15

```

```

Leu Gly Leu Ala Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu
      20             25             30

```

```

Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly
  35             40             45

```

```

Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser
  50             55             60

```

```

Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys
  65             70             75             80

```

Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln
 85 90 95
 Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly
 100 105 110
 Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser
 115 120 125
 Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp
 130 135 140
 Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp
 145 150 155 160
 Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly
 165 170 175
 Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser
 180 185 190
 Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val
 195 200 205
 Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly
 210 215 220
 Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Val Leu Ser Ala
 225 230 235 240
 Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln
 245 250 255
 Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu
 260 265 270
 Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro
 275 280

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 128

aagttccagt gccgcaccag tggc

24

<210> 129

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 129
 ttggttccac agccgagctc gtcg 24

<210> 130
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 130
 gaggaggagt gcaggattga gccatgtacc cagaaagggc aatgcccacc 50

<210> 131
 <211> 1843
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> (1837)
 <223> a, t, c or g

<400> 131
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 ggggttagact ggcgggggga ggaggcggag gaggggaagga agctgcatgc atgagaccca 120
 cagactcttg caagctggat gccctctgtg gatgaaagat gtatcatgga atgaaccgga 180
 gcaatggaga tggatttcta gagcagcagc agcagcagca gcaacctcag tccccccaga 240
 gactcttggc cgtgatcctg tggtttcagc tggcgctgtg cttcggccct gcacagctca 300
 cgggcggggt cgatgacctt caagtgtgtg ctgaccccgagg cattcccgag aatggcttca 360
 ggacccccag cggagggggt ttctttgaag gctctgtagc ccgatttcac tgccaagacg 420
 gattcaagct gaagggcgct acaaagagac tgtgtttgaa gcattttaat ggaaccctag 480
 gctggatccc aagtgataat tccatctgtg tgcaagaaga ttgccgtatc cctcaaactg 540
 aagatgctga gattcataac aagacatata gacatggaga gaagctaata atcacttgtc 600
 atgaaggatt caagatccgg taccgccgacc tacacaatat ggtttcatta tgtcgcgatg 660
 atggaacgtg gaataatctg cccatctgtc aaggctgcct gagacctcta gcctcttcta 720
 atggctatgt aaacatctct gagctccaga cctccttccc ggtggggact gtgatctcct 780
 atcgctgctt tcccggattt aaacttgatg ggtctgcgta tcttgagtgc ttacaaaacc 840
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 acatcacctg ccagtatgga gagtggtttc cttcttatca agtctactgc atcaaatacag 1080
 agcaaactg gccacgaccc catgagaccc tccatgaccac gtggaagatt gtggcggttca 1140


```

cggcaaccag tgtgctgctg gtgctgctgc tcgtcatcct ggccaggatg ttccagacca 1200
agttcaaggc ccactttccc cccagggggc ctccccggag ttccagcagt gacctgact 1260
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cggcagagga ggtggcatcc accagcccag gcatccatca tgcccactgg gtgttggtcc 1620
taagaaactg attgattaa aaatttccca aagtgtcctg aagtgtctct tcaaatacat 1680
gttgatctgt ggagttgatt cctttccttc tcttggtttt agacaaatgt aaacaaagct 1740
ctgatacctta aaattgctat gctgatagag tggtgagggc tggaagcttg atcaagtcct 1800
gtttcttctt gacacagact gattaaaaat taaaagnaaa aaa 1843

```

<210> 132

<211> 490

<212> PRT

<213> Homo sapiens

<400> 132

```

Met Tyr His Gly Met Asn Pro Ser Asn Gly Asp Gly Phe Leu Glu Gln
  1             5             10             15

```

```

Gln Gln Gln Gln Gln Gln Pro Gln Ser Pro Gln Arg Leu Leu Ala Val
      20             25             30

```

```

Ile Leu Trp Phe Gln Leu Ala Leu Cys Phe Gly Pro Ala Gln Leu Thr
      35             40             45

```

```

Gly Gly Phe Asp Asp Leu Gln Val Cys Ala Asp Pro Gly Ile Pro Glu
      50             55             60

```

```

Asn Gly Phe Arg Thr Pro Ser Gly Gly Val Phe Phe Glu Gly Ser Val
      65             70             75             80

```

```

Ala Arg Phe His Cys Gln Asp Gly Phe Lys Leu Lys Gly Ala Thr Lys
      85             90             95

```

```

Arg Leu Cys Leu Lys His Phe Asn Gly Thr Leu Gly Trp Ile Pro Ser
      100             105             110

```

```

Asp Asn Ser Ile Cys Val Gln Glu Asp Cys Arg Ile Pro Gln Ile Glu
      115             120             125

```

```

Asp Ala Glu Ile His Asn Lys Thr Tyr Arg His Gly Glu Lys Leu Ile
      130             135             140

```

```

Ile Thr Cys His Glu Gly Phe Lys Ile Arg Tyr Pro Asp Leu His Asn
      145             150             155             160

```

```

Met Val Ser Leu Cys Arg Asp Asp Gly Thr Trp Asn Asn Leu Pro Ile
      165             170             175

```

```

Cys Gln Gly Cys Leu Arg Pro Leu Ala Ser Ser Asn Gly Tyr Val Asn

```

[illegible]

Ile Ala Ser Thr Ala Glu Glu Val Ala Ser Thr Ser Pro Gly Ile His
 465 470 475 480

His Ala His Trp Val Leu Phe Leu Arg Asn
 485 490

<210> 133

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 133

atctcctatc gctgctttcc cgg

23

<210> 134

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 134

agccaggatc gcagtaaaac tcc

23

<210> 135

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 135

atttaaactt gatgggtctg cgtatcttga gtgcttaca aaccttatct

50

<210> 136

<211> 1815

<212> DNA

<213> Homo sapiens

<400> 136

cccacgcgtc cgctccgcgc cctccccccc gcctcccgctg cggtecgteg gtggcctaga 60
 gatgctgctg ccgcggttgc agttgtcgcg cagcctctg ccgccagcc cgctccaccg 120
 ccgtagcgcc cgagtgtcgg ggggcgcacc cgagtcgggc catgaggccg ggaaccgcgc 180
 tacaggccgt gctgctggcc gtgctgctgg tggggctgcg ggccgcgacg ggtcgcttgc 240
 tgagtgcctc ggatttggac ctcagaggag ggcagccagt ctgccgggga gggacacaga 300

```

ggccttggtta taaagtcatt tacttccatg atacttctcg aagactgaac tttgaggaag 360
ccaaagaagc ctgcaggagg gatggaggcc agctagtcag catcgagtct gaagatgaac 420
agaaaactgat agaaaagttc attgaaaacc tcttgccatc tgatgggtgac ttctggattg 480
ggctcaggag gcgtgaggag aaacaaagca atagcacagc ctgccaggac ctttatgctt 540
ggactgatgg cagcatatca caatttagga actggtatgt ggatgagccg tcctgcggca 600
gcgaggtctg cgtggtcatg taccatcagc catcggcacc cgctggcatc ggaggcccct 660
acatgttcca gtggaatgat gaccggtgca acatgaagaa caatttcatt tgcaaatatt 720
ctgatgagaa accagcagtt ccttctagag aagctgaagg tgaggaaaca gagctgacaa 780
cacctgtact tccagaagaa acacaggaag aagatgccaa aaaaacattt aaagaaagta 840
gagaagctgc cttgaatctg gcctacatcc taatccccag cattccccct ctctctctcc 900
ttgtgggtcac cacagttgta tgttgggttt ggatctgtag aaaaagaaaa cgggagcagc 960
cagaccctag cacaaagaag caacacacca tctggccctc tctcaccag ggaaacagcc 1020
cggacctaga ggtctacaat gtcataagaa aacaaagcga agctgactta gctgagaccc 1080
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aaagatgggc tgtggagctt ggaaaaccac ctctgttttc cttgctctat acagcagcac 1680
atattatcat acagacagaa aatccagaat cttttcaaag cccacatatg gtagcacagg 1740
ttggcctgtg catcggaat tctcatatct gtttttttca aagaataaaa tcaaataaag 1800
agcaggaaaa aaaaa 1815

```

<210> 137

<211> 382

<212> PRT

<213> Homo sapiens

<400> 137

```

Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val Leu Leu
  1              5              10              15

```

```

Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Ala Ser Asp Leu
          20              25              30

```

```

Asp Leu Arg Gly Gly Gln Pro Val Cys Arg Gly Gly Thr Gln Arg Pro
          35              40              45

```

```

Cys Tyr Lys Val Ile Tyr Phe His Asp Thr Ser Arg Arg Leu Asn Phe
          50              55              60

```

```

Glu Glu Ala Lys Glu Ala Cys Arg Arg Asp Gly Gly Gln Leu Val Ser
          65              70              75              80

```

```

Ile Glu Ser Glu Asp Glu Gln Lys Leu Ile Glu Lys Phe Ile Glu Asn
          85              90              95

```

```

Leu Leu Pro Ser Asp Gly Asp Phe Trp Ile Gly Leu Arg Arg Arg Glu
          100              105              110

```

Glu Lys Gln Ser Asn Ser Thr Ala Cys Gln Asp Leu Tyr Ala Trp Thr
 115 120 125
 Asp Gly Ser Ile Ser Gln Phe Arg Asn Trp Tyr Val Asp Glu Pro Ser
 130 135 140
 Cys Gly Ser Glu Val Cys Val Val Met Tyr His Gln Pro Ser Ala Pro
 145 150 155 160
 Ala Gly Ile Gly Gly Pro Tyr Met Phe Gln Trp Asn Asp Asp Arg Cys
 165 170 175
 Asn Met Lys Asn Asn Phe Ile Cys Lys Tyr Ser Asp Glu Lys Pro Ala
 180 185 190
 Val Pro Ser Arg Glu Ala Glu Gly Glu Glu Thr Glu Leu Thr Thr Pro
 195 200 205
 Val Leu Pro Glu Glu Thr Gln Glu Glu Asp Ala Lys Lys Thr Phe Lys
 210 215 220
 Glu Ser Arg Glu Ala Ala Leu Asn Leu Ala Tyr Ile Leu Ile Pro Ser
 225 230 235 240
 Ile Pro Leu Leu Leu Leu Val Val Thr Thr Val Val Cys Trp Val
 245 250 255
 Trp Ile Cys Arg Lys Arg Lys Arg Glu Gln Pro Asp Pro Ser Thr Lys
 260 265 270
 Lys Gln His Thr Ile Trp Pro Ser Pro His Gln Gly Asn Ser Pro Asp
 275 280 285
 Leu Glu Val Tyr Asn Val Ile Arg Lys Gln Ser Glu Ala Asp Leu Ala
 290 295 300
 Glu Thr Arg Pro Asp Leu Lys Asn Ile Ser Phe Arg Val Cys Ser Gly
 305 310 315 320
 Glu Ala Thr Pro Asp Asp Met Ser Cys Asp Tyr Asp Asn Met Ala Val
 325 330 335
 Asn Pro Ser Glu Ser Gly Phe Val Thr Leu Val Ser Val Glu Ser Gly
 340 345 350
 Phe Val Thr Asn Asp Ile Tyr Glu Phe Ser Pro Asp Gln Met Gly Arg
 355 360 365
 Ser Lys Glu Ser Gly Trp Val Glu Asn Glu Ile Tyr Gly Tyr
 370 375 380

<210> 138

<211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 138
 gttcattgaa aacctcttgc catctgatgg tgacttctgg attgggctca 50

<210> 139
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 139
 aagccaaaga agcctgcagg aggg 24

<210> 140
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 140
 cagtcgaagc ataaaggtcc tggc 24

<210> 141
 <211> 1514
 <212> DNA
 <213> Homo sapiens

<400> 141
 ggggtctccc tcagggccgg gaggcacagc ggtccctgct tgctgaaggg ctggatgtac 60
 gcatccgcag gttcccgcgg acttgggggc gcccgctgag ccccggcgcc cgcagaagac 120
 ttgtgtttgc ctctgcagc ctcaaccgcg agggcagcga gggcctacca ccatgatcac 180
 tgggtgtgttc agcatgcgct tgtggacccc agtgggcgtc ctgacctcgc tggcgtagtg 240
 cctgcaccag cggcgggtgg ccctggccga gctgcaggag gccgatggcc agtgtccggg 300
 cgaccgcagc ctgctgaagt tgaaaatggt gcaggctcgtg ttctgacacg gggctcggag 360
 tcctctcaag ccgctcccgc tggaggagca ggtagagtgg aacccccagc tattagaggt 420
 cccaccccaa actcagtttg attacacagt caccaatcta gctggtgggc cgaaaccata 480
 ttctccttac gactctcaat accatgagac caccctgaag gggggcatgt ttgctgggca 540
 gctgaccaag gtgggcatgc agcaaatgtt tgccttggga gagagactga ggaagaacta 600
 tgtggaagac attcccttcc ttccaccaac ctccaacca caggaggtct ttattcgttc 660
 cactaacatt ttccggaatc tggagtcacac ccgttgtttg ctggctgggc ttttccagtg 720

```

tcagaaagaa ggacccatca tcatccacac tgatgaagca gattcagaag tcttgatcc 780
caactaccaa agctgctgga gcctgaggca gagaaccaga ggccggaggc agactgcctc 840
tttacagcca ggaatctcag aggatttgaa aaaggatgaag gacaggatgg gcattgacag 900
tagtgataaa gtggacttct tcatectcct ggacaacgtg gctgccgagc aggcacacaa 960
cctcccaagc tgcccatgc tgaagagatt tgcacggatg atcgaacaga gagctgtgga 1020
cacatecttg tacatactgc ccaaggaaga cagggaaagt cttcagatgg cagtaggccc 1080
attcctccac atcctagaga gcaacctgct gaaagccatg gactctgcca ctgcccccca 1140
caagatcaga aagctgtatc tctatgcggc tcatgatgtg accttcatac cgtctttaat 1200
gacctggggg atttttgacc acaaattggc accgtttgct gttgacctga ccatggaact 1260
ttaccagcac ctggaatcta aggagtgggt tgtgcagctc tattaccacg ggaaggagca 1320
ggtgccgaga gggtgccctg atgggctctg cccgctggac atgttcttga atgccatgtc 1380
agtttatacc ttaagcccag aaaaatacca tgcactctgc tctcaaaactc aggtgatgga 1440
agttggaat gaagagtaac tgatttataa aagcaggatg tgttgatttt aaaataaagt 1500
gcctttatac aatg 1514

```

<210> 142

<211> 428

<212> PRT

<213> Homo sapiens

<400> 142

```

Met Ile Thr Gly Val Phe Ser Met Arg Leu Trp Thr Pro Val Gly Val
  1                      5                      10                      15

```

```

Leu Thr Ser Leu Ala Tyr Cys Leu His Gln Arg Arg Val Ala Leu Ala
          20                      25                      30

```

```

Glu Leu Gln Glu Ala Asp Gly Gln Cys Pro Val Asp Arg Ser Leu Leu
          35                      40                      45

```

```

Lys Leu Lys Met Val Gln Val Val Phe Arg His Gly Ala Arg Ser Pro
          50                      55                      60

```

```

Leu Lys Pro Leu Pro Leu Glu Glu Gln Val Glu Trp Asn Pro Gln Leu
          65                      70                      75                      80

```

```

Leu Glu Val Pro Pro Gln Thr Gln Phe Asp Tyr Thr Val Thr Asn Leu
          85                      90                      95

```

```

Ala Gly Gly Pro Lys Pro Tyr Ser Pro Tyr Asp Ser Gln Tyr His Glu
          100                      105                      110

```

```

Thr Thr Leu Lys Gly Gly Met Phe Ala Gly Gln Leu Thr Lys Val Gly
          115                      120                      125

```

```

Met Gln Gln Met Phe Ala Leu Gly Glu Arg Leu Arg Lys Asn Tyr Val
          130                      135                      140

```

```

Glu Asp Ile Pro Phe Leu Ser Pro Thr Phe Asn Pro Gln Glu Val Phe
          145                      150                      155                      160

```

```

Ile Arg Ser Thr Asn Ile Phe Arg Asn Leu Glu Ser Thr Arg Cys Leu
          165                      170                      175

```

Leu Ala Gly Leu Phe Gln Cys Gln Lys Glu Gly Pro Ile Ile Ile His
 180 185 190
 Thr Asp Glu Ala Asp Ser Glu Val Leu Tyr Pro Asn Tyr Gln Ser Cys
 195 200 205
 Trp Ser Leu Arg Gln Arg Thr Arg Gly Arg Arg Gln Thr Ala Ser Leu
 210 215 220
 Gln Pro Gly Ile Ser Glu Asp Leu Lys Lys Val Lys Asp Arg Met Gly
 225 230 235 240
 Ile Asp Ser Ser Asp Lys Val Asp Phe Phe Ile Leu Leu Asp Asn Val
 245 250 255
 Ala Ala Glu Gln Ala His Asn Leu Pro Ser Cys Pro Met Leu Lys Arg
 260 265 270
 Phe Ala Arg Met Ile Glu Gln Arg Ala Val Asp Thr Ser Leu Tyr Ile
 275 280 285
 Leu Pro Lys Glu Asp Arg Glu Ser Leu Gln Met Ala Val Gly Pro Phe
 290 295 300
 Leu His Ile Leu Glu Ser Asn Leu Leu Lys Ala Met Asp Ser Ala Thr
 305 310 315 320
 Ala Pro Asp Lys Ile Arg Lys Leu Tyr Leu Tyr Ala Ala His Asp Val
 325 330 335
 Thr Phe Ile Pro Leu Leu Met Thr Leu Gly Ile Phe Asp His Lys Trp
 340 345 350
 Pro Pro Phe Ala Val Asp Leu Thr Met Glu Leu Tyr Gln His Leu Glu
 355 360 365
 Ser Lys Glu Trp Phe Val Gln Leu Tyr Tyr His Gly Lys Glu Gln Val
 370 375 380
 Pro Arg Gly Cys Pro Asp Gly Leu Cys Pro Leu Asp Met Phe Leu Asn
 385 390 395 400
 Ala Met Ser Val Tyr Thr Leu Ser Pro Glu Lys Tyr His Ala Leu Cys
 405 410 415
 Ser Gln Thr Gln Val Met Glu Val Gly Asn Glu Glu
 420 425

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 143

ccaactacca aagctgctgg agcc

24

<210> 144

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 144

gcagctctat taccacggga agga

24

<210> 145

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 145

tccttcccggt ggtaatagag ctgc

24

<210> 146

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 146

ggcagagaac cagaggccgg aggagactgc ctctttacag ccagg

45

<210> 147

<211> 1686

<212> DNA

<213> Homo sapiens

<400> 147

ctcctcttaa cataacttgca gctaaaacta aatattgctg cttggggacc tccttctagc 60
cttaaatttc agctcatcac cttcacctgc cttgggtcatg gctctgctat tctccttgat 120
ccttgccatt tgcaccagac ctggattcct agcgtctcca tctggagtgc ggctggtggg 180

```

gggcctccac cgctgtgaag ggcgggtgga ggtggaacag aaaggccagt ggggcaccgt 240
gtgtgatgac ggctgggaca ttaaggacgt ggctgtgttg tgccgggagc tgggctgtgg 300
agctgccagc ggaaccccta gtggtatatt gtatgagcca ccagcagaaa aagagcaaaa 360
ggctcctcat caatcagtc gttgcacagg aacagaagat acattggctc agtgtgagca 420
agaagaagtt tatgattgtt cacatgatga agatgctggg gcatcgtgtg agaaccaga 480
gagctctttc tccccagtc cagagggtgt caggctggct gacggcctg ggcattgcaa 540
gggacgcgtg gaagtgaagc accagaacca gtggtatacc gtgtgccaga caggctggag 600
cctccggggc gcaaagggtg tgtgccggca gctgggatgt gggagggtg tactgactca 660
aaaacgctgc aacaagcatg cctatggcgc aaaacccatc tggctgagcc agatgtcatg 720
ctcaggacga gaagcaaccc ttcaggattg cccttctggg ccttggggga agaacacctg 780
caaccatgat gaagacacgt gggtcgaatg tgaagatccc tttgacttga gactagtagg 840
aggagacaac ctctgctctg ggcgactgga ggtgctgcac aagggcgtat ggggctctgt 900
ctgtgatgac aactggggag aaaaggagga ccagggtgta tgcaagcaac tgggctgtgg 960
gaagtccctc tctccctcct tcagagaccg gaaatgctat ggccctgggg ttggccgcat 1020
ctggctggat aatgttcgtt gctcagggga ggagcagtc ctggagcagt gccagcacag 1080
attttggggg tttcacgact gcacccacca ggaagatgtg gctgtcatct gctcagtgt 1140
ggtgggcata atctaactct ttgagtgcct gaatagaaga aaaacacaga agaagggagc 1200
atttactgtc tacatgactg catgggatga aactgatct tcttctgccc ttggactggg 1260
acttatactt ggtgcccctg attctcaggc cttcagagtt ggatcagaac ttacaacatc 1320
aggtctagtt ctcaggccat cagacatagt ttggaactac atcaccacct ttcctatgtc 1380
tccacattgc acacagcaga tcccagcct ccataattgt gtgtatcaac tacttaaata 1440
cattctcaca cacacacaca cacacacaca cacacacaca cacacataca ccatttgtcc 1500
tgtttctctg aagaactctg acaaaatata gattttggta ctgaaagaga ttctagagga 1560
acggaatttt aaggataaat tttctgaatt gggtatgggg tttctgaaat tggtctata 1620
atctaattag atataaaatt ctggttaact tatttacaat aataaagata gcactatgtg 1680
ttcaaa 1686

```

<210> 148

<211> 347

<212> PRT

<213> Homo sapiens

<400> 148

```

Met Ala Leu Leu Phe Ser Leu Ile Leu Ala Ile Cys Thr Arg Pro Gly
  1                      5                      10                      15

```

```

Phe Leu Ala Ser Pro Ser Gly Val Arg Leu Val Gly Gly Leu His Arg
                20                      25                      30

```

```

Cys Glu Gly Arg Val Glu Val Glu Gln Lys Gly Gln Trp Gly Thr Val
    35                      40                      45

```

```

Cys Asp Asp Gly Trp Asp Ile Lys Asp Val Ala Val Leu Cys Arg Glu
    50                      55                      60

```

```

Leu Gly Cys Gly Ala Ala Ser Gly Thr Pro Ser Gly Ile Leu Tyr Glu
    65                      70                      75                      80

```

```

Pro Pro Ala Glu Lys Glu Gln Lys Val Leu Ile Gln Ser Val Ser Cys
                85                      90                      95

```

```

Thr Gly Thr Glu Asp Thr Leu Ala Gln Cys Glu Gln Glu Glu Val Tyr
    100                      105                      110

```

Asp Cys Ser His Asp Glu Asp Ala Gly Ala Ser Cys Glu Asn Pro Glu
 115 120 125

Ser Ser Phe Ser Pro Val Pro Glu Gly Val Arg Leu Ala Asp Gly Pro
 130 135 140

Gly His Cys Lys Gly Arg Val Glu Val Lys His Gln Asn Gln Trp Tyr
 145 150 155 160

Thr Val Cys Gln Thr Gly Trp Ser Leu Arg Ala Ala Lys Val Val Cys
 165 170 175

Arg Gln Leu Gly Cys Gly Arg Ala Val Leu Thr Gln Lys Arg Cys Asn
 180 185 190

Lys His Ala Tyr Gly Arg Lys Pro Ile Trp Leu Ser Gln Met Ser Cys
 195 200 205

Ser Gly Arg Glu Ala Thr Leu Gln Asp Cys Pro Ser Gly Pro Trp Gly
 210 215 220

Lys Asn Thr Cys Asn His Asp Glu Asp Thr Trp Val Glu Cys Glu Asp
 225 230 235 240

Pro Phe Asp Leu Arg Leu Val Gly Gly Asp Asn Leu Cys Ser Gly Arg
 245 250 255

Leu Glu Val Leu His Lys Gly Val Trp Gly Ser Val Cys Asp Asp Asn
 260 265 270

Trp Gly Glu Lys Glu Asp Gln Val Val Cys Lys Gln Leu Gly Cys Gly
 275 280 285

Lys Ser Leu Ser Pro Ser Phe Arg Asp Arg Lys Cys Tyr Gly Pro Gly
 290 295 300

Val Gly Arg Ile Trp Leu Asp Asn Val Arg Cys Ser Gly Glu Glu Gln
 305 310 315 320

Ser Leu Glu Gln Cys Gln His Arg Phe Trp Gly Phe His Asp Cys Thr
 325 330 335

His Gln Glu Asp Val Ala Val Ile Cys Ser Val
 340 345

<210> 149

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide probe

<400> 149
ttcagctcat caccttcacc tgcc 24

<210> 150
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 150
ggtcatatac aaataccact aggg 24

<210> 151
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 151
gggcctccac cgctgtgaag ggcgggtgga ggtggaacag aaaggccagt 50

<210> 152
<211> 1427
<212> DNA
<213> Homo sapiens

<400> 152
actgcactcg gttctatcga ttgaattccc cggggatcct ctagagatcc ctgcacctcg 60
acccacgcgt ccgcggacgc gtgggcggac gcgtgggccc gctaccagga agagtctgcc 120
gaagggtgaag gccatggact tcatcacctc cacagccatc ctgcccctgc tgttcggctg 180
cctgggcgtc ttccgacctc tccggctgct gcagtgggtg cgcgggaagg cctacctgcg 240
gaatgctgtg gtggtgatca caggcgccac ctgagggtcg ggcaaagaat gtgcaaaagt 300
cttctatgct gcgggtgcta aactggtgct ctgtggccgg aatggtgggg ccctagaaga 360
gctcatcaga gaacttaccg cttctcatgc caccaagggtg cagacacaca agccttactt 420
ggtgaccttc gacctcacag actctggggc catagtgtga gcagcagctg agatcctgca 480
gtgctttggc tatgtcgaca tacttgtcaa caatgctggg atcagctacc gtggtaccat 540
catggacacc acagtggatg tggacaagag ggtcatggag acaaactact ttggcccagt 600
tgctctaacg aaagcactcc tgccctccat gatcaagagg aggcaaggcc acattgtgcg 660
catcagcagc atccagggca agatgagcat tccttttcga tcagcatatg cagcctccaa 720
gcacgcaacc caggctttct ttgactgtct gcgtgccgag atggaacagt atgaaattga 780
ggtgaccgtc atcagccccg gctacatcca caccaacctc tctgtaaatg ccacaccgc 840
ggatggatct aggtatggag ttatggacac caccacagcc cagggccgaa gccctgtgga 900
ggtggcccag gatgttcttg ctgctgtggg gaagaagaag aaagatgtga tcttggctga 960
cttactgctt tccttggctg tttatcttcg aactctggct cctgggctct tcttcagcct 1020
catggcctcc agggccagaa aagagcggaa atccaagaac tcctagtact ctgaccagcc 1080

```

agggccaggg cagagaagca gcactcttag gcttgcttac tctacaaggg acagttgcat 1140
ttgttgagac tttaatggag atttgtctca caagtgggaa agactgaaga aacacatctc 1200
gtgcagatct gctggcagag gacaatcaaa aacgacaaca agcttcttcc cagggtgagg 1260
ggaaacactt aaggaataaa tatggagctg gggtttaaca ctaaaaacta gaaataaaca 1320
tctcaaacag taaaaaaaaa aaaaaagggc ggccgcgact ctagagtcga cctgcagaag 1380
cttgcccgcc atggcccaac ttgtttattg cagcttataa tggttac 1427

```

<210> 153

<211> 310

<212> PRT

<213> Homo sapiens

<400> 153

```

Met Asp Phe Ile Thr Ser Thr Ala Ile Leu Pro Leu Leu Phe Gly Cys
  1             5             10             15

```

```

Leu Gly Val Phe Gly Leu Phe Arg Leu Leu Gln Trp Val Arg Gly Lys
          20             25             30

```

```

Ala Tyr Leu Arg Asn Ala Val Val Val Ile Thr Gly Ala Thr Ser Gly
      35             40             45

```

```

Leu Gly Lys Glu Cys Ala Lys Val Phe Tyr Ala Ala Gly Ala Lys Leu
      50             55             60

```

```

Val Leu Cys Gly Arg Asn Gly Gly Ala Leu Glu Glu Leu Ile Arg Glu
      65             70             75             80

```

```

Leu Thr Ala Ser His Ala Thr Lys Val Gln Thr His Lys Pro Tyr Leu
          85             90             95

```

```

Val Thr Phe Asp Leu Thr Asp Ser Gly Ala Ile Val Ala Ala Ala
      100            105            110

```

```

Glu Ile Leu Gln Cys Phe Gly Tyr Val Asp Ile Leu Val Asn Asn Ala
      115            120            125

```

```

Gly Ile Ser Tyr Arg Gly Thr Ile Met Asp Thr Thr Val Asp Val Asp
      130            135            140

```

```

Lys Arg Val Met Glu Thr Asn Tyr Phe Gly Pro Val Ala Leu Thr Lys
      145            150            155            160

```

```

Ala Leu Leu Pro Ser Met Ile Lys Arg Arg Gln Gly His Ile Val Ala
          165            170            175

```

```

Ile Ser Ser Ile Gln Gly Lys Met Ser Ile Pro Phe Arg Ser Ala Tyr
      180            185            190

```

```

Ala Ala Ser Lys His Ala Thr Gln Ala Phe Phe Asp Cys Leu Arg Ala
      195            200            205

```

```

Glu Met Glu Gln Tyr Glu Ile Glu Val Thr Val Ile Ser Pro Gly Tyr

```

| | | |
|---|-----|---------|
| 210 | 215 | 220 |
| Ile His Thr Asn Leu Ser Val Asn Ala Ile Thr Ala Asp Gly Ser Arg | | |
| 225 | 230 | 235 240 |
| Tyr Gly Val Met Asp Thr Thr Thr Ala Gln Gly Arg Ser Pro Val Glu | | |
| | 245 | 250 255 |
| Val Ala Gln Asp Val Leu Ala Ala Val Gly Lys Lys Lys Lys Asp Val | | |
| | 260 | 265 270 |
| Ile Leu Ala Asp Leu Leu Pro Ser Leu Ala Val Tyr Leu Arg Thr Leu | | |
| | 275 | 280 285 |
| Ala Pro Gly Leu Phe Phe Ser Leu Met Ala Ser Arg Ala Arg Lys Glu | | |
| | 290 | 295 300 |
| Arg Lys Ser Lys Asn Ser | | |
| 305 | 310 | |

<210> 154

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 154

ggtgctaaac tgggtgctctg tggc

24

<210> 155

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 155

cagggcaaga tgagcattcc

20

<210> 156

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 156
tcatactgtt ccatactcggc acgc

24

<210> 157
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 157
aatggtgggg ccctagaaga gctcatcaga gaactcacgc cttctcatgc

50

<210> 158
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 158
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cctcctgctt ctcccgttac tgatcgtctg ctccctagag tccttcgtga agctttttat 180
tctaagagg agaaaatcag tcaccggcga aatcgtgctg attacaggag ctgggcatgg 240
aatggggaga ctgactgcct atgaatttgc taaacttaaa agcaagctgg ttctctggga 300
tataaataag catggactgg aggaaacagc tgccaaatgc aagggaactgg gtgccaaggt 360
tcataccttt gtggtagact gcagcaacgc agaagatatt tacagctctg caaagaaggt 420
gaaggcagaa attggagatg ttagtatttt agtaataat gctgggttag tctatacatc 480
agatttgttt gctacacaag atcctcagat tgaaaagact tttgaagtta atgtacttgc 540
acatttctgg actacaaaagg catttcttcc tgcaatgacg aagaataacc atggccatat 600
tgtcactgtg gcttcggcag ctggacatgt ctcggtcccc ttcttactgg cttactgttc 660
aagcaagttt gctgctgttg gatttcataa aactttgaca gatgaactgg ctgccttaca 720
aataactgga gtcaaaacaa catgtctgtg tcctaatttc gtaaacactg gcttcatcaa 780
aaatccaagt acaagtttgg gacccactct ggaacctgag gaagtggtaa acaggctgat 840
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aacattggaa aggatccttc ctgagcgttt cctggcagtt ttaaaacgaa aaatcagttg 960
taagtttgat gcagttattg gatataaaat gaaagcgcaa taagcaccta gttttctgaa 1020
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tttctgttct acataaaatc agaaacttca agctctctaa ataaaatgaa ggactatata 1440
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agagaatgta cccacaaatg gcagcaataa taaatggatc acacttaaaa aaaaaaaaaa 1680
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a a 1771

<210> 159

<211> 300

<212> PRT

<213> Homo sapiens

<400> 159

Met Lys Phe Leu Leu Asp Ile Leu Leu Leu Leu Pro Leu Leu Ile Val
 1 5 10 15

Cys Ser Leu Glu Ser Phe Val Lys Leu Phe Ile Pro Lys Arg Arg Lys
 20 25 30

Ser Val Thr Gly Glu Ile Val Leu Ile Thr Gly Ala Gly His Gly Ile
 35 40 45

Gly Arg Leu Thr Ala Tyr Glu Phe Ala Lys Leu Lys Ser Lys Leu Val
 50 55 60

Leu Trp Asp Ile Asn Lys His Gly Leu Glu Glu Thr Ala Ala Lys Cys
 65 70 75 80

Lys Gly Leu Gly Ala Lys Val His Thr Phe Val Val Asp Cys Ser Asn
 85 90 95

Arg Glu Asp Ile Tyr Ser Ser Ala Lys Lys Val Lys Ala Glu Ile Gly
 100 105 110

Asp Val Ser Ile Leu Val Asn Asn Ala Gly Val Val Tyr Thr Ser Asp
 115 120 125

Leu Phe Ala Thr Gln Asp Pro Gln Ile Glu Lys Thr Phe Glu Val Asn
 130 135 140

Val Leu Ala His Phe Trp Thr Thr Lys Ala Phe Leu Pro Ala Met Thr
 145 150 155 160

Lys Asn Asn His Gly His Ile Val Thr Val Ala Ser Ala Ala Gly His
 165 170 175

Val Ser Val Pro Phe Leu Leu Ala Tyr Cys Ser Ser Lys Phe Ala Ala
 180 185 190

Val Gly Phe His Lys Thr Leu Thr Asp Glu Leu Ala Ala Leu Gln Ile
 195 200 205

Thr Gly Val Lys Thr Thr Cys Leu Cys Pro Asn Phe Val Asn Thr Gly
 210 215 220

Phe Ile Lys Asn Pro Ser Thr Ser Leu Gly Pro Thr Leu Glu Pro Glu
 225 230 235 240

Glu Val Val Asn Arg Leu Met His Gly Ile Leu Thr Glu Gln Lys Met
 245 250 255

Ile Phe Ile Pro Ser Ser Ile Ala Phe Leu Thr Thr Leu Glu Arg Ile
 260 265 270

Leu Pro Glu Arg Phe Leu Ala Val Leu Lys Arg Lys Ile Ser Val Lys
 275 280 285

Phe Asp Ala Val Ile Gly Tyr Lys Met Lys Ala Gln
 290 295 300

<210> 160

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 160

ggtgaaggca gaaattggag atg

23

<210> 161

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 161

atcccatgca tcagcctgtt tacc

24

<210> 162

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 162

gctggtgtag tctatacatc agatttggtt gctacacaag atcctcag

48

<210> 163

<211> 2076

<212> DNA

<213> Homo sapiens

<400> 163

cccacgcgtc cgcggacgcg tgggtcgact agttctagat cgcgagcggc cgcccgcggc 60
 tcaggaggga gcaccgactg gcgccaccc tgagagatgg ttggtgccat gtggaagggtg 120

```

attgtttcgc tggctcctggt gatgcctggc cccgtgtgat ggctgtttcg ctccctatac 180
agaagtgttt ccatgccacc taagggagac tcaggacagc cattatttct cacccttac 240
attgaagctg ggaagatcca aaaaggaaga gaattgagtt tggctcgccc ttcccagga 300
ctgaacatga agagttatgc cggcttcctc accgtgaata agacttacaa cagcaacctc 360
ttctttctggt tcttcccagc tcagatacag ccagaagatg ccccagtagt tctctggcta 420
caggggtgggc cgggagggtt atccatgttt ggactctttg tggacatgg gcttatgtt 480
gtcacaagta acatgacctt gcgtgacaga gacttccctt ggaccacaac gctctccatg 540
ctttacattg acaatccagt gggcacaggc ttcagtttta ctgatgatac ccacggatat 600
gcagtcaatg aggacgatgt agcacgggat ttatacagtg cactaattca gtttttccag 660
atatttcctg aatataaaaa taatgacttt tatgtcactg gggagtctta tgcagggaaa 720
tatgtgccag ccattgcaca cctcatccat tccctcaacc ctgtgagaga ggtgaagatc 780
aacctgaacg gaattgctat tggagatgga tattctgata ccgaatcaat tatagggggc 840
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aagcagtgcc atgaatgcat agaacacatc aggaagcaga actggtttga ggcctttgaa 960
atactggata aactactaga tggcgactta acaagtgate cttcttactt ccagaatgtt 1020
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tatgtgaaat ttttgtcact cccagagggtg agacaagcca tccacgtggg gaatcagact 1140
tttaatgatg gaactatagt tgaaaagtac ttgcgagaag atacagtaca gtcagttaag 1200
ccatgggttaa ctgaaatcat gaataattat aagggttctga tctacaatgg ccaactggac 1260
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caggaataca agaaggcaga aaaaaaagtt tgggaagatct ttaaatctga cagtgaagtg 1380
gctggttaca tccggcaagc gggtgacttc catcaggtaa ttattcgagg tggaggacat 1440
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aaaggatggg atccttatgt tggataaaact accttcccaa aagagaacat cagaggtttt 1560
cattgctgaa aagaaaaatcg taaaaacaga aaatgtcata ggaataaaaa aattatcttt 1620
tcatactcgc aagatttttt tcatcaataa aaattatcct tgaaacaagt gactttttgt 1680
ttttgggggg agatgtttac tacaaaatta acatgagtac atgagtaaga attacattat 1740
ttaacttaaa ggatgaaagg tatggatgat gtgacactga gacaagatgt ataaatgaaa 1800
ttttagggtc ttgaatagga agtttttaatt tcttctaaga gtaagtgaaa agtgcagttg 1860
taacaaacaa agctgtaaca tctttttctg ccaataacag aagtttggca tgccgtgaag 1920
gtgtttggaa atattattgg ataagaatag ctcaattatc ccaaataaat ggatgaagct 1980
ataatagttt tggggaaaag attctcaaat gtataaagtc ttagaacaaa agaattcttt 2040
gaaataaaaa tattatatat aaaagtaaaa aaaaaa 2076

```

<210> 164

<211> 476

<212> PRT

<213> Homo sapiens

<400> 164

```

Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu Leu Met
  1             5             10             15

```

```

Pro Gly Pro Cys Asp Gly Leu Phe Arg Ser Leu Tyr Arg Ser Val Ser
      20             25             30

```

```

Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro Tyr
      35             40             45

```

```

Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val Gly
      50             55             60

```

```

Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr Val

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asn | Lys | Thr | Tyr | Asn | Ser | Asn | Leu | Phe | Phe | Trp | Phe | Phe | Pro | Ala | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ile | Gln | Pro | Glu | Asp | Ala | Pro | Val | Val | Leu | Trp | Leu | Gln | Gly | Gly | Pro |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Gly | Gly | Ser | Ser | Met | Phe | Gly | Leu | Phe | Val | Glu | His | Gly | Pro | Tyr | Val |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Val | Thr | Ser | Asn | Met | Thr | Leu | Arg | Asp | Arg | Asp | Phe | Pro | Trp | Thr | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Leu | Ser | Met | Leu | Tyr | Ile | Asp | Asn | Pro | Val | Gly | Thr | Gly | Phe | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Phe | Thr | Asp | Asp | Thr | His | Gly | Tyr | Ala | Val | Asn | Glu | Asp | Asp | Val | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Arg | Asp | Leu | Tyr | Ser | Ala | Leu | Ile | Gln | Phe | Phe | Gln | Ile | Phe | Pro | Glu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Tyr | Lys | Asn | Asn | Asp | Phe | Tyr | Val | Thr | Gly | Glu | Ser | Tyr | Ala | Gly | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Tyr | Val | Pro | Ala | Ile | Ala | His | Leu | Ile | His | Ser | Leu | Asn | Pro | Val | Arg |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Glu | Val | Lys | Ile | Asn | Leu | Asn | Gly | Ile | Ala | Ile | Gly | Asp | Gly | Tyr | Ser |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Pro | Glu | Ser | Ile | Ile | Gly | Gly | Tyr | Ala | Glu | Phe | Leu | Tyr | Gln | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Leu | Leu | Asp | Glu | Lys | Gln | Lys | Lys | Tyr | Phe | Gln | Lys | Gln | Cys | His |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Cys | Ile | Glu | His | Ile | Arg | Lys | Gln | Asn | Trp | Phe | Glu | Ala | Phe | Glu |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Ile | Leu | Asp | Lys | Leu | Leu | Asp | Gly | Asp | Leu | Thr | Ser | Asp | Pro | Ser | Tyr |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Phe | Gln | Asn | Val | Thr | Gly | Cys | Ser | Asn | Tyr | Tyr | Asn | Phe | Leu | Arg | Cys |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Thr | Glu | Pro | Glu | Asp | Gln | Leu | Tyr | Tyr | Val | Lys | Phe | Leu | Ser | Leu | Pro |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Glu | Val | Arg | Gln | Ala | Ile | His | Val | Gly | Asn | Gln | Thr | Phe | Asn | Asp | Gly |
| | | | 340 | | | | | 345 | | | | | 350 | | |

Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser Val Lys
 355 360 365

Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile Tyr Asn
 370 375 380

Gly Gln Leu Asp Ile Ile Val Ala Ala Ala Leu Thr Glu Arg Ser Leu
 385 390 395 400

Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu Lys
 405 410 415

Lys Val Trp Lys Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr Ile
 420 425 430

Arg Gln Ala Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly His
 435 440 445

Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn Arg
 450 455 460

Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly
 465 470 475

<210> 165

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 165

ttccatgcca cctaaggag actc

24

<210> 166

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 166

tggatgaggt gtgcaatggc tggc

24

<210> 167

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 167

agctctcaga ggctgggtcat aggg

24

<210> 168

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 168

gtcgggccctt tcccaggact gaacatgaag agttatgccg gcttcctcac

50

<210> 169

<211> 2477

<212> DNA

<213> Homo sapiens

<400> 169

| | | | | | | |
|------------|------------|------------|-------------|------------|------------|------|
| cgagggtttt | tccgggtccg | gaatggcaca | tgtgggaatc | ccagtcttgt | tggctacaac | 60 |
| atttttccct | ttcctaacaa | gttctaacag | ctgttctaac | agctagtgat | caggggttct | 120 |
| tcttgctgga | gaagaaaggg | ctgagggcag | agcagggcac | tctcactcag | ggtgaccagc | 180 |
| tccttgccct | tctgtggata | acagagcatg | agaaagtga | gagatgcagc | ggagtgaggt | 240 |
| gatggaagtc | taaaatagga | aggaattttg | tgtgcaatat | cagactctgg | gagcagttga | 300 |
| cctggagagc | ctgggggagg | gcctgcctaa | caagctttca | aaaaacagga | gcgacttcca | 360 |
| ctgggctggg | ataagacgtg | ccggtaggat | agggagagct | gggttttagt | ctaatatcaa | 420 |
| attgactggc | tgggtgaact | tcaacagcct | tttaacctct | ctgggagatg | aaaacgatgg | 480 |
| cttaaggggc | cagaaataga | gatgctttgt | aaaataaaat | tttaaaaaaa | gcaagtattt | 540 |
| tatagcataa | aggctagaga | ccaaaataga | taacaggatt | ccctgaacat | tcctaagagg | 600 |
| gagaaagtat | gttaaaaata | gaaaaaccaa | aatgcagaag | gaggagactc | acagagctaa | 660 |
| accaggatgg | ggaccctggg | tcaggccagc | ctctttgtct | ctcccggaaa | ttatttttgg | 720 |
| tctgaccact | ctgccttgtg | ttttgcagaa | tcattgtgag | gccaaccggg | gaaggtggag | 780 |
| cagatgagca | cacacaggag | ccgtctctct | accgcgcgcc | ctctcagcat | ggaacagagg | 840 |
| cagccctggc | cccgggccct | ggaggtggac | agccgctctg | tggctctgct | ctcagtggtc | 900 |
| tgggtgctgc | tggccccccc | agcagccggc | atgcctcagt | tcagcacctt | ccactctgag | 960 |
| aatcgtgact | ggaccttcaa | ccacttgacc | gtccaccaag | ggacgggggc | cgtctatgtg | 1020 |
| ggggccatca | accgggtcta | taagctgaca | ggcaacctga | ccatccaggt | ggctcataag | 1080 |
| acagggccag | aagaggacaa | caagtctcgt | taccgcgcgc | tcattcgtga | gccttcgagc | 1140 |
| gaagtgtctc | ccctcaccac | caatgtcaac | aagctgtctc | tcattgacta | ctctgagaac | 1200 |
| cgctgtctgg | cctgtgggag | cctctaccag | ggggtctgca | agctgtctgc | gctggatgac | 1260 |
| ctcttcaccc | tgggtggagc | atcccacaag | aaggagcact | acctgtccag | tgtcaacaag | 1320 |
| acgggcacca | tgtacggggt | gattgtgcgc | tctgaggggt | aggatggcaa | gctcttcac | 1380 |
| ggcacggctg | tggatgggaa | gcaggattac | ttcccagccc | tgtccagccc | gaagctgccc | 1440 |
| cgagaccctg | agtcctcagc | catgctcgac | tatgagctac | acagcgattt | tgtctcctct | 1500 |
| ctcatcaaga | tccttccaga | caccctggcc | ctgggtctccc | actttgacat | cttctacatc | 1560 |
| tacggctttg | ctagtggggg | ctttgtctac | tttctcactg | tccagcccga | gacccctgag | 1620 |
| ggtgtggcca | tcaactccgc | tggagacctc | ttctacacct | cacgcacgtc | gcggtctctg | 1680 |

```

aaggatgacc ccaagttcca ctcatacgtg tccctgccct tcggctgcac cggggccggg 1740
gtggaataacc gctcctgca ggetgcttac ctggccaagc ctggggactc actggcccag 1800
gccttcaata tcaccagcca ggacgatgta ctctttgcca tcttctccaa agggcagaag 1860
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gtaaggaatg caagcgtatt tcaatatttc ccaaacttta agaaaaaact ttaagaaggt 2460
acatctgcaa aagcaaa 2477

```

<210> 170

<211> 552

<212> PRT

<213> Homo sapiens

<400> 170

```

Met Gly Thr Leu Gly Gln Ala Ser Leu Phe Ala Pro Pro Gly Asn Tyr
  1                      5                      10                      15

```

```

Phe Trp Ser Asp His Ser Ala Leu Cys Phe Ala Glu Ser Cys Glu Gly
          20                      25                      30

```

```

Gln Pro Gly Lys Val Glu Gln Met Ser Thr His Arg Ser Arg Leu Leu
          35                      40                      45

```

```

Thr Ala Ala Pro Leu Ser Met Glu Gln Arg Gln Pro Trp Pro Arg Ala
          50                      55                      60

```

```

Leu Glu Val Asp Ser Arg Ser Val Val Leu Leu Ser Val Val Trp Val
          65                      70                      75                      80

```

```

Leu Leu Ala Pro Pro Ala Ala Gly Met Pro Gln Phe Ser Thr Phe His
          85                      90                      95

```

```

Ser Glu Asn Arg Asp Trp Thr Phe Asn His Leu Thr Val His Gln Gly
          100                      105                      110

```

```

Thr Gly Ala Val Tyr Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr
          115                      120                      125

```

```

Gly Asn Leu Thr Ile Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp
          130                      135                      140

```

```

Asn Lys Ser Arg Tyr Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val
          145                      150                      155                      160

```

```

Leu Thr Leu Thr Asn Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser
          165                      170                      175

```

Glu Asn Arg Leu Leu Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys
 180 185 190
 Leu Leu Arg Leu Asp Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys
 195 200 205
 Lys Glu His Tyr Leu Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly
 210 215 220
 Val Ile Val Arg Ser Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr
 225 230 235 240
 Ala Val Asp Gly Lys Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys
 245 250 255
 Leu Pro Arg Asp Pro Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His
 260 265 270
 Ser Asp Phe Val Ser Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala
 275 280 285
 Leu Val Ser His Phe Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly
 290 295 300
 Gly Phe Val Tyr Phe Leu Thr Val Gln Pro Glu Thr Pro Glu Gly Val
 305 310 315 320
 Ala Ile Asn Ser Ala Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg
 325 330 335
 Leu Cys Lys Asp Asp Pro Lys Phe His Ser Tyr Val Ser Leu Pro Phe
 340 345 350
 Gly Cys Thr Arg Ala Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr
 355 360 365
 Leu Ala Lys Pro Gly Asp Ser Leu Ala Gln Ala Phe Asn Ile Thr Ser
 370 375 380
 Gln Asp Asp Val Leu Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr
 385 390 395 400
 His His Pro Pro Asp Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala
 405 410 415
 Ile Asn Leu Gln Ile Lys Glu Arg Leu Gln Ser Cys Tyr Gln Gly Glu
 420 425 430
 Gly Asn Leu Glu Leu Asn Trp Leu Leu Gly Lys Asp Val Gln Cys Thr
 435 440 445
 Lys Ala Pro Val Pro Ile Asp Asp Asn Phe Cys Gly Leu Asp Ile Asn

| | | |
|---|-----|---------|
| 450 | 455 | 460 |
| Gln Pro Leu Gly Gly Ser Thr Pro Val Glu Gly Leu Thr Leu Tyr Thr | | |
| 465 | 470 | 475 480 |
| Thr Ser Arg Asp Arg Met Thr Ser Val Ala Ser Tyr Val Tyr Asn Gly | | |
| | 485 | 490 495 |
| Tyr Ser Val Val Phe Val Gly Thr Lys Ser Gly Lys Leu Lys Lys Val | | |
| | 500 | 505 510 |
| Arg Val Tyr Glu Phe Arg Cys Ser Asn Ala Ile His Leu Leu Ser Lys | | |
| | 515 | 520 525 |
| Glu Ser Leu Leu Glu Gly Ser Tyr Trp Trp Arg Phe Asn Tyr Arg Gln | | |
| | 530 | 535 540 |
| Leu Tyr Phe Leu Gly Glu Gln Arg | | |
| 545 | 550 | |

<210> 171

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 171

tggaataaccg cctcctgcag

20

<210> 172

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 172

cttctgccct ttggagaaga tggc

24

<210> 173

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 173
ggactcactg gccagggcct tcaatatac cagccaggac gat

42

<210> 174
<211> 3106
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (1683)
<223> a, t, c or g

<400> 174
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cgtggaacct gcatgagcca gaaagaggca aatttgactt ctctgggaac ctggacctgg 420
aggccttcgt cctgatggcc gcagagatcg ggctgtgggt gattctgcgt ccaggccctt 480
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tgaggctgag gacaacttac aagggttca ccgaagcagt ggacctttat ttgaccacc 600
tgatgtccag ggtggtgcca ctccagtaca agcgtggggg acctatcatt gccgtgcagg 660
tgagaaatga atatggttcc tataataaag accccgcata catgccctac gtcaagaagg 720
cactggagga ccgtggcatt gtggaactgc tctgacttc agacaacaag gatgggctga 780
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aggctgtcgg gctgtctcta ggggtgggag agctaatac atcgcccag ctttggccct 2280

```

cagaaaaagt gctgaaacgt gcccttgca cggacgtcac agccctgaga gcattctgtg 2340
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tttatccccg aaatcctggg tgtgtcacca gtgtagaggg tggggaaggg gtgtctcacc 2460
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gaagtgtgtc caagtccgca ttgagcctt gttctggggc ccagcccaac acctgggttg 3060
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```

<210> 175

<211> 636

<212> PRT

<213> Homo sapiens

<220>

<221> MOD_RES

<222> (539)

<223> Any amino acid

<400> 175

```

Met Thr Thr Trp Ser Leu Arg Arg Arg Pro Ala Arg Thr Leu Gly Leu
  1              5              10              15

```

```

Leu Leu Leu Val Val Leu Gly Phe Leu Val Leu Arg Arg Leu Asp Trp
          20              25              30

```

```

Ser Thr Leu Val Pro Leu Arg Leu Arg His Arg Gln Leu Gly Leu Gln
          35              40              45

```

```

Ala Lys Gly Trp Asn Phe Met Leu Glu Asp Ser Thr Phe Trp Ile Phe
          50              55              60

```

```

Gly Gly Ser Ile His Tyr Phe Arg Val Pro Arg Glu Tyr Trp Arg Asp
          65              70              75              80

```

```

Arg Leu Leu Lys Met Lys Ala Cys Gly Leu Asn Thr Leu Thr Thr Tyr
          85              90              95

```

```

Val Pro Trp Asn Leu His Glu Pro Glu Arg Gly Lys Phe Asp Phe Ser
          100             105             110

```

```

Gly Asn Leu Asp Leu Glu Ala Phe Val Leu Met Ala Ala Glu Ile Gly
          115             120             125

```

```

Leu Trp Val Ile Leu Arg Pro Gly Pro Tyr Ile Cys Ser Glu Met Asp
          130             135             140

```

Leu Gly Gly Leu Pro Ser Trp Leu Leu Gln Asp Pro Gly Met Arg Leu
 145 150 155 160
 Arg Thr Thr Tyr Lys Gly Phe Thr Glu Ala Val Asp Leu Tyr Phe Asp
 165 170 175
 His Leu Met Ser Arg Val Val Pro Leu Gln Tyr Lys Arg Gly Gly Pro
 180 185 190
 Ile Ile Ala Val Gln Val Glu Asn Glu Tyr Gly Ser Tyr Asn Lys Asp
 195 200 205
 Pro Ala Tyr Met Pro Tyr Val Lys Lys Ala Leu Glu Asp Arg Gly Ile
 210 215 220
 Val Glu Leu Leu Leu Thr Ser Asp Asn Lys Asp Gly Leu Ser Lys Gly
 225 230 235 240
 Ile Val Gln Gly Val Leu Ala Thr Ile Asn Leu Gln Ser Thr His Glu
 245 250 255
 Leu Gln Leu Leu Thr Thr Phe Leu Phe Asn Val Gln Gly Thr Gln Pro
 260 265 270
 Lys Met Val Met Glu Tyr Trp Thr Gly Trp Phe Asp Ser Trp Gly Gly
 275 280 285
 Pro His Asn Ile Leu Asp Ser Ser Glu Val Leu Lys Thr Val Ser Ala
 290 295 300
 Ile Val Asp Ala Gly Ser Ser Ile Asn Leu Tyr Met Phe His Gly Gly
 305 310 315 320
 Thr Asn Phe Gly Phe Met Asn Gly Ala Met His Phe His Asp Tyr Lys
 325 330 335
 Ser Asp Val Thr Ser Tyr Asp Tyr Asp Ala Val Leu Thr Glu Ala Gly
 340 345 350
 Asp Tyr Thr Ala Lys Tyr Met Lys Leu Arg Asp Phe Phe Gly Ser Ile
 355 360 365
 Ser Gly Ile Pro Leu Pro Pro Pro Pro Asp Leu Leu Pro Lys Met Pro
 370 375 380
 Tyr Glu Pro Leu Thr Pro Val Leu Tyr Leu Ser Leu Trp Asp Ala Leu
 385 390 395 400
 Lys Tyr Leu Gly Glu Pro Ile Lys Ser Glu Lys Pro Ile Asn Met Glu
 405 410 415
 Asn Leu Pro Val Asn Gly Gly Asn Gly Gln Ser Phe Gly Tyr Ile Leu
 420 425 430

Tyr Glu Thr Ser Ile Thr Ser Ser Gly Ile Leu Ser Gly His Val His
435 440 445

Asp Arg Gly Gln Val Phe Val Asn Thr Val Ser Ile Gly Phe Leu Asp
450 455 460

Tyr Lys Thr Thr Lys Ile Ala Val Pro Leu Ile Gln Gly Tyr Thr Val
465 470 475 480

Leu Arg Ile Leu Val Glu Asn Arg Gly Arg Val Asn Tyr Gly Glu Asn
485 490 495

Ile Asp Asp Gln Arg Lys Gly Leu Ile Gly Asn Leu Tyr Leu Asn Asp
500 505 510

Ser Pro Leu Lys Asn Phe Arg Ile Tyr Ser Leu Asp Met Lys Lys Ser
515 520 525

Phe Phe Gln Arg Phe Gly Leu Asp Lys Trp Xaa Ser Leu Pro Glu Thr
530 535 540

Pro Thr Leu Pro Ala Phe Phe Leu Gly Ser Leu Ser Ile Ser Ser Thr
545 550 555 560

Pro Cys Asp Thr Phe Leu Lys Leu Glu Gly Trp Glu Lys Gly Val Val
565 570 575

Phe Ile Asn Gly Gln Asn Leu Gly Arg Tyr Trp Asn Ile Gly Pro Gln
580 585 590

Lys Thr Leu Tyr Leu Pro Gly Pro Trp Leu Ser Ser Gly Ile Asn Gln
595 600 605

Val Ile Val Phe Glu Glu Thr Met Ala Gly Pro Ala Leu Gln Phe Thr
610 615 620

Glu Thr Pro His Leu Gly Arg Asn Gln Tyr Ile Lys
625 630 635

<210> 176

<211> 2505

<212> DNA

<213> Homo sapiens

<400> 176

ggggacgcgg agctgagagg ctccgggcta gctaggtgta ggggtggacg ggtcccagga 60
ccctgggtgag ggttctctac ttggccttcg gtgggggtca agacgcaggc acctacgcca 120
aaggggagca aagccgggct cggcccagagg cccccaggac ctccatctcc caatggttga 180
ggaatccgac acgtgacggt ctgtccgccg tctcagacta gaggagcgt gtaaacgcca 240
tggtctccaa gaagctgtcc tgccttcgtt cctgtctgct gccgctcagc ctgacgctac 300
tgctgccccca ggcagacact cggtcgttcg tagtggatag gggtcacgac cggtttctcc 360
tagacgggggc cccgttccgc tatgtgtctg gcagcctgca ctactttcgg gtaccgcggg 420

```

tgctttgggc cgaccggctt ttgaagatgc gatggagcgg cctcaacgcc atacagtttt 480
atgtgccttg gaactaccac gagccacagc ctgggggteta taactttaat ggcagccggg 540
acctcattgc ctttctgaat gaggcagctc tagcgaacct gttgggcata ctgagaccag 600
gaccttacat ctgtgcagag tgggagatgg ggggtctccc atcctgggtg cttcgaaaac 660
ctgaaattca tctaagaacc tcagatccag acttccttgc cgcagtggac tectggttca 720
aggtcttgct gcccagata tatccatggc tttatcacia tgggggcaac atcattagca 780
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ctgaaggact caagtgtggc tccctccggg gactctatac cactgtagat tttggcccag 960
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taaactctga gtactacaca ggctggctgg attactgggg ccagaatcac tccacacggg 1080
ctgtgtcagc tgtaaccaa ggactagaga acatgctcaa gttgggagcc agtgtgaaca 1140
tgtacatgtt ccatggaggt accaactttg gatattggaa tgggtgcgat aagaaggac 1200
gcttccttcc gattactacc agctatgact atgatgcacc tatatctgaa gcaggggacc 1260
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gacctttacc tcccccgagc cccaagatga tgcttggacc tgtgactctg cacctgggtg 1380
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cccataccat ttttgagcca acaccattct ggggtccaaa taatggagtc catgaccgtg 1560
cctatgtgat ggtggatggg gtgttccagg gtgttgtgga gcgaaatatg agagacaaac 1620
tatttttgac ggggaaactg ggggtccaaac tggatatctt ggtggagaac atggggaggc 1680
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agcctatcct caatagcact agtactttgc acaggacaca tatcaattcc ctttcagctg 2160
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tcaggacttc aagaccagcc tggccaacat ggtgaaaccc cgtctccact aaaaatacaa 2340
aaattagccg ggcgtgatgg tgggcacctc taatcccagc tacttgggag gctgagggca 2400
ggagaattgc ttgaatccag gaggcagagg ttgcagttag tggaggttgt accactgcac 2460
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```

<210> 177

<211> 654

<212> PRT

<213> Homo sapiens

<400> 177

```

Met Ala Pro Lys Lys Leu Ser Cys Leu Arg Ser Leu Leu Leu Pro Leu
  1             5             10             15

```

```

Ser Leu Thr Leu Leu Leu Pro Gln Ala Asp Thr Arg Ser Phe Val Val
      20             25             30

```

```

Asp Arg Gly His Asp Arg Phe Leu Leu Asp Gly Ala Pro Phe Arg Tyr
      35             40             45

```

```

Val Ser Gly Ser Leu His Tyr Phe Arg Val Pro Arg Val Leu Trp Ala
      50             55             60

```

Asp Arg Leu Leu Lys Met Arg Trp Ser Gly Leu Asn Ala Ile Gln Phe
 65 70 75 80
 Tyr Val Pro Trp Asn Tyr His Glu Pro Gln Pro Gly Val Tyr Asn Phe
 85 90 95
 Asn Gly Ser Arg Asp Leu Ile Ala Phe Leu Asn Glu Ala Ala Leu Ala
 100 105 110
 Asn Leu Leu Val Ile Leu Arg Pro Gly Pro Tyr Ile Cys Ala Glu Trp
 115 120 125
 Glu Met Gly Gly Leu Pro Ser Trp Leu Leu Arg Lys Pro Glu Ile His
 130 135 140
 Leu Arg Thr Ser Asp Pro Asp Phe Leu Ala Ala Val Asp Ser Trp Phe
 145 150 155 160
 Lys Val Leu Leu Pro Lys Ile Tyr Pro Trp Leu Tyr His Asn Gly Gly
 165 170 175
 Asn Ile Ile Ser Ile Gln Val Glu Asn Glu Tyr Gly Ser Tyr Arg Ala
 180 185 190
 Cys Asp Phe Ser Tyr Met Arg His Leu Ala Gly Leu Phe Arg Ala Leu
 195 200 205
 Leu Gly Glu Lys Ile Leu Leu Phe Thr Thr Asp Gly Pro Glu Gly Leu
 210 215 220
 Lys Cys Gly Ser Leu Arg Gly Leu Tyr Thr Thr Val Asp Phe Gly Pro
 225 230 235 240
 Ala Asp Asn Met Thr Lys Ile Phe Thr Leu Leu Arg Lys Tyr Glu Pro
 245 250 255
 His Gly Pro Leu Val Asn Ser Glu Tyr Tyr Thr Gly Trp Leu Asp Tyr
 260 265 270
 Trp Gly Gln Asn His Ser Thr Arg Ser Val Ser Ala Val Thr Lys Gly
 275 280 285
 Leu Glu Asn Met Leu Lys Leu Gly Ala Ser Val Asn Met Tyr Met Phe
 290 295 300
 His Gly Gly Thr Asn Phe Gly Tyr Trp Asn Gly Ala Asp Lys Lys Gly
 305 310 315 320
 Arg Phe Leu Pro Ile Thr Thr Ser Tyr Asp Tyr Asp Ala Pro Ile Ser
 325 330 335
 Glu Ala Gly Asp Pro Thr Pro Lys Leu Phe Ala Leu Arg Asp Val Ile

Asn Ser Thr Ser Thr Leu His Arg Thr His Ile Asn Ser Leu Ser Ala
 625 630 635 640

Asp Thr Leu Ser Ala Ser Glu Pro Met Glu Leu Ser Gly His
 645 650

<210> 178

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 178

tggctactcc aagaccctgg catg

24

<210> 179

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 179

tggacaaaatc cccttgctca gccc

24

<210> 180

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 180

gggcttcacc gaagcagtgg acctttattt tgaccacctg atgtccaggg

50

<210> 181

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 181

ccagctatga ctatgatgca cc

22

<210> 182
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 182
 tggcaccacag aatggtgttg gctc 24

<210> 183
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 183
 cgagatgtca tcagcaagtt ccaggaagtt cctttgggac ctttacctcc 50

<210> 184
 <211> 1947
 <212> DNA
 <213> Homo sapiens

<400> 184
 gctttgaaca cgtctgcaag cccaaagttg agcatctgat tggttatgag gtatttgagt 50
 gcaccacaaa tatggcttac atgttgaaaa agcttctcat cagttacata tccattattt 120
 gtgtttatgg ctttatctgc ctctacactc tcttctgggt attcaggata cctttgaagg 180
 aatattcttt cgaaaaagtc agagaagaga gcagtttttag tgacattcca gatgtcaaaa 240
 acgattttgc gttccttctt cacatggtag accagtatga ccagctatat tccaagcgtt 300
 ttggtgtggt cttgtcagaa gttagtgaaa ataaacttag ggaaattagt ttgaaccatg 360
 agtggacatt tgaaaaactc aggcagcaca tttcacgcaa cgcccaggac aagcaggagt 420
 tgcactctgt catgctgtcg ggggtgcccg atgctgtctt tgacctcaca gacctggatg 480
 tgctaaagct tgaactaatt ccagaagcta aaattcctgc taagatttct caaatgacta 540
 acctccaaga gctccacctc tgccactgcc ctgcaaaaagt tgaacagact gcttttagct 600
 ttcttcgcga tcaacttgaga tgccttcacg tgaagttcac tgatgtggct gaaattcctg 660
 cctgggtgta tttgctcaaa aaccttcagag agttgtactt aataggcaat ttgaactctg 720
 aaaacaataa gatgatagga cttgaatctc tccgagagtt gcggcacctt aagattctcc 780
 acgtgaagag caatttgacc aaagttccct ccaacattac agatgtggct ccacatctta 840
 caaagttagt cattcataat gacggcacta aactcttggt actgaacagc ctaagaaaaa 900
 tgatgaatgt cgctgagctg gaactccaga actgtgagct agagagaatc ccacatgcta 960
 ttttcagcct ctctaattta caggaactgg atttaaagtc caataacatt cgcacaattg 1020
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 aaattgttac tattctctcc tctattaccc atgtcaaaaa cttggagtca ctttatttct 1140
 ctaacaacaa gctcgaatcc ttaccagtgg cagtatttag ttacagaaa ctcatatgct 1200
 tagatgtgag ctacaacaac atttcaatga ttccaataga aataggattg cttcagaacc 1260
 tgcagcattt gcataatcact gggaacaaaag tggacattct gccaaaacaa ttgtttaaat 1320

```

gcataaagtt gaggactttg aatctgggac agaactgcat cacctcactc ccagagaaaag 1380
ttggtcagct ctcccagctc actcagctgg agctgaaggg gaactgcttg gaccgcctgc 1440
cagcccagct gggccagtg cggatgctca agaaaagcgg gcttggttg gaagatcacc 1500
tttttgatac cctgccactc gaagtcaaag aggcattgaa tcaagacata aatattccct 1560
ttgcaaattg gatttaaact aagataatat atgcacagtg atgtgcagga acaacttcct 1620
agattgcaag tgctcacgta caagttatta caagataatg catttttagga gtagatacat 1680
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aatgtttgta ggggttttaag tcattcattt ccaaattcatt ttttttttc ttttggggaa 1800
agggaaggaa aaattataat cactaatctt ggttcctttt aaattgttg taacttgat 1860
gctgccgcta ctgaatgttt acaaattgct tgcttgctaa agtaaagat taaattgaca 1920
ttttcttact aaaaaaaaaa aaaaaaa 1947

```

<210> 185

<211> 501

<212> PRT

<213> Homo sapiens

<400> 185

```

Met Ala Tyr Met Leu Lys Lys Leu Leu Ile Ser Tyr Ile Ser Ile Ile
  1             5             10             15

```

```

Cys Val Tyr Gly Phe Ile Cys Leu Tyr Thr Leu Phe Trp Leu Phe Arg
          20             25             30

```

```

Ile Pro Leu Lys Glu Tyr Ser Phe Glu Lys Val Arg Glu Glu Ser Ser
          35             40             45

```

```

Phe Ser Asp Ile Pro Asp Val Lys Asn Asp Phe Ala Phe Leu Leu His
          50             55             60

```

```

Met Val Asp Gln Tyr Asp Gln Leu Tyr Ser Lys Arg Phe Gly Val Phe
          65             70             75             80

```

```

Leu Ser Glu Val Ser Glu Asn Lys Leu Arg Glu Ile Ser Leu Asn His
          85             90             95

```

```

Glu Trp Thr Phe Glu Lys Leu Arg Gln His Ile Ser Arg Asn Ala Gln
          100            105            110

```

```

Asp Lys Gln Glu Leu His Leu Phe Met Leu Ser Gly Val Pro Asp Ala
          115            120            125

```

```

Val Phe Asp Leu Thr Asp Leu Asp Val Leu Lys Leu Glu Leu Ile Pro
          130            135            140

```

```

Glu Ala Lys Ile Pro Ala Lys Ile Ser Gln Met Thr Asn Leu Gln Glu
          145            150            155            160

```

```

Leu His Leu Cys His Cys Pro Ala Lys Val Glu Gln Thr Ala Phe Ser
          165            170            175

```

```

Phe Leu Arg Asp His Leu Arg Cys Leu His Val Lys Phe Thr Asp Val
          180            185            190

```

Ala Glu Ile Pro Ala Trp Val Tyr Leu Leu Lys Asn Leu Arg Glu Leu
 195 200 205
 Tyr Leu Ile Gly Asn Leu Asn Ser Glu Asn Asn Lys Met Ile Gly Leu
 210 215 220
 Glu Ser Leu Arg Glu Leu Arg His Leu Lys Ile Leu His Val Lys Ser
 225 230 235 240
 Asn Leu Thr Lys Val Pro Ser Asn Ile Thr Asp Val Ala Pro His Leu
 245 250 255
 Thr Lys Leu Val Ile His Asn Asp Gly Thr Lys Leu Leu Val Leu Asn
 260 265 270
 Ser Leu Lys Lys Met Met Asn Val Ala Glu Leu Glu Leu Gln Asn Cys
 275 280 285
 Glu Leu Glu Arg Ile Pro His Ala Ile Phe Ser Leu Ser Asn Leu Gln
 290 295 300
 Glu Leu Asp Leu Lys Ser Asn Asn Ile Arg Thr Ile Glu Glu Ile Ile
 305 310 315 320
 Ser Phe Gln His Leu Lys Arg Leu Thr Cys Leu Lys Leu Trp His Asn
 325 330 335
 Lys Ile Val Thr Ile Pro Pro Ser Ile Thr His Val Lys Asn Leu Glu
 340 345 350
 Ser Leu Tyr Phe Ser Asn Asn Lys Leu Glu Ser Leu Pro Val Ala Val
 355 360 365
 Phe Ser Leu Gln Lys Leu Arg Cys Leu Asp Val Ser Tyr Asn Asn Ile
 370 375 380
 Ser Met Ile Pro Ile Glu Ile Gly Leu Leu Gln Asn Leu Gln His Leu
 385 390 395 400
 His Ile Thr Gly Asn Lys Val Asp Ile Leu Pro Lys Gln Leu Phe Lys
 405 410 415
 Cys Ile Lys Leu Arg Thr Leu Asn Leu Gly Gln Asn Cys Ile Thr Ser
 420 425 430
 Leu Pro Glu Lys Val Gly Gln Leu Ser Gln Leu Thr Gln Leu Glu Leu
 435 440 445
 Lys Gly Asn Cys Leu Asp Arg Leu Pro Ala Gln Leu Gly Gln Cys Arg
 450 455 460
 Met Leu Lys Lys Ser Gly Leu Val Val Glu Asp His Leu Phe Asp Thr

455 470 475 480
 Leu Pro Leu Glu Val Lys Glu Ala Leu Asn Gln Asp Ile Asn Ile Pro
 485 490 495
 Phe Ala Asn Gly Ile
 500

<210> 186
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 186
 cctccctcta ttacccatgt c 21

<210> 187
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 187
 gaccaacttt ctctgggagt gagg 24

<210> 188
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 188
 gtcactttat ttctctaaca acaagctcga atccttacca gtggcag 47

<210> 189
 <211> 2917
 <212> DNA
 <213> Homo sapiens

<400> 189
 cccacgcgtc cggccttctc tctggacttt gcatttccat tccttttcat tgacaaactg 60
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 aagacatttg tgttttacac acataaggat ctgtgtttgg ggttttcttct tcttcccttg 180

acattggcat tgetttagtgg ttgtgtgggg agggagacca cgtgggctca gtgcttgctt 240
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 atcgctggtg gtatcctggc ggccttgctc ctgctgatat ttgtcgtgct ctgtcctttac 360
 ttcaaaatac acaacgcgct aaaagctgca aaggaaacctg aagctgtggc tgtaaaaaat 420
 cacaaccag acaaggtgtg gtggggccaag aacagccagg ccaaaacctat tgccacggag 480
 tcttgcctcg cctgcagtg ctgtgaagga tatagaatgt gtgccagttt tgattccctg 540
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 gcagagccct gaagacttca atgatgtcaa tgaggccacc tgtttgtgat gtgcaggcac 660
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<210> 190

<211> 607

<212> PRT

<213> Homo sapiens

<400> 190

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Val | Arg | Arg | Leu | Met | Pro | Leu | Thr | Leu | Leu | Ile | Leu | Ser | 1 | 5 | 10 | 15 |
| Cys | Leu | Ala | Glu | Leu | Thr | Met | Ala | Glu | Ala | Glu | Gly | Asn | Ala | Ser | Cys | 20 | 25 | 30 | |
| Thr | Val | Ser | Leu | Gly | Gly | Ala | Asn | Met | Ala | Glu | Thr | His | Lys | Ala | Met | 35 | 40 | 45 | |
| Ile | Leu | Gln | Leu | Asn | Pro | Ser | Glu | Asn | Cys | Thr | Trp | Thr | Ile | Glu | Arg | 50 | 55 | 60 | |
| Pro | Glu | Asn | Lys | Ser | Ile | Arg | Ile | Ile | Phe | Ser | Tyr | Val | Gln | Leu | Asp | 65 | 70 | 75 | 80 |
| Pro | Asp | Gly | Ser | Cys | Glu | Ser | Glu | Asn | Ile | Lys | Val | Phe | Asp | Gly | Thr | 85 | 90 | 95 | |
| Ser | Ser | Asn | Gly | Pro | Leu | Leu | Gly | Gln | Val | Cys | Ser | Lys | Asn | Asp | Tyr | 100 | 105 | 110 | |
| Val | Pro | Val | Phe | Glu | Ser | Ser | Ser | Ser | Thr | Leu | Thr | Phe | Gln | Ile | Val | 115 | 120 | 125 | |
| Thr | Asp | Ser | Ala | Arg | Ile | Gln | Arg | Thr | Val | Phe | Val | Phe | Tyr | Tyr | Phe | 130 | 135 | 140 | |
| Phe | Ser | Pro | Asn | Ile | Ser | Ile | Pro | Asn | Cys | Gly | Gly | Tyr | Leu | Asp | Thr | 145 | 150 | 155 | 160 |
| Leu | Glu | Gly | Ser | Phe | Thr | Ser | Pro | Asn | Tyr | Pro | Lys | Pro | His | Pro | Glu | 165 | 170 | 175 | |
| Leu | Ala | Tyr | Cys | Val | Trp | His | Ile | Gln | Val | Glu | Lys | Asp | Tyr | Lys | Ile | 180 | 185 | 190 | |
| Lys | Leu | Asn | Phe | Lys | Glu | Ile | Phe | Leu | Glu | Ile | Asp | Lys | Gln | Cys | Lys | 195 | 200 | 205 | |
| Phe | Asp | Phe | Leu | Ala | Ile | Tyr | Asp | Gly | Pro | Ser | Thr | Asn | Ser | Gly | Leu | 210 | 215 | 220 | |
| Ile | Gly | Gln | Val | Cys | Gly | Arg | Val | Thr | Pro | Thr | Phe | Glu | Ser | Ser | Ser | 225 | 230 | 235 | 240 |
| Asn | Ser | Leu | Thr | Val | Val | Leu | Ser | Thr | Asp | Tyr | Ala | Asn | Ser | Tyr | Arg | 245 | 250 | 255 | |
| Gly | Phe | Ser | Ala | Ser | Tyr | Thr | Ser | Ile | Tyr | Ala | Glu | Asn | Ile | Asn | Thr | 260 | 265 | 270 | |
| Thr | Ser | Leu | Thr | Cys | Ser | Ser | Asp | Arg | Met | Arg | Val | Ile | Ile | Ser | Lys | 275 | 280 | 285 | |

Ser Tyr Leu Glu Ala Phe Asn Ser Asn Gly Asn Asn Leu Gln Leu Lys
 290 295 300
 Asp Pro Thr Cys Arg Pro Lys Leu Ser Asn Val Val Glu Phe Ser Val
 305 310 315 320
 Pro Leu Asn Gly Cys Gly Thr Ile Arg Lys Val Glu Asp Gln Ser Ile
 325 330 335
 Thr Tyr Thr Asn Ile Ile Thr Phe Ser Ala Ser Ser Thr Ser Glu Val
 340 345 350
 Ile Thr Arg Gln Lys Gln Leu Gln Ile Ile Val Lys Cys Glu Met Gly
 355 360 365
 His Asn Ser Thr Val Glu Ile Ile Tyr Ile Thr Glu Asp Asp Val Ile
 370 375 380
 Gln Ser Gln Asn Ala Leu Gly Lys Tyr Asn Thr Ser Met Ala Leu Phe
 385 390 395 400
 Glu Ser Asn Ser Phe Glu Lys Thr Ile Leu Glu Ser Pro Tyr Tyr Val
 405 410 415
 Asp Leu Asn Gln Thr Leu Phe Val Gln Val Ser Leu His Thr Ser Asp
 420 425 430
 Pro Asn Leu Val Val Phe Leu Asp Thr Cys Arg Ala Ser Pro Thr Ser
 435 440 445
 Asp Phe Ala Ser Pro Thr Tyr Asp Leu Ile Lys Ser Gly Cys Ser Arg
 450 455 460
 Asp Glu Thr Cys Lys Val Tyr Pro Leu Phe Gly His Tyr Gly Arg Phe
 465 470 475 480
 Gln Phe Asn Ala Phe Lys Phe Leu Arg Ser Met Ser Ser Val Tyr Leu
 485 490 495
 Gln Cys Lys Val Leu Ile Cys Asp Ser Ser Asp His Gln Ser Arg Cys
 500 505 510
 Asn Gln Gly Cys Val Ser Arg Ser Lys Arg Asp Ile Ser Ser Tyr Lys
 515 520 525
 Trp Lys Thr Asp Ser Ile Ile Gly Pro Ile Arg Leu Lys Arg Asp Arg
 530 535 540
 Ser Ala Ser Gly Asn Ser Gly Phe Gln His Glu Thr His Ala Glu Glu
 545 550 555 560
 Thr Pro Asn Gln Pro Phe Asn Ser Val His Leu Phe Ser Phe Met Val

565

570

575

Leu Ala Leu Asn Val Val Thr Val Ala Thr Ile Thr Val Arg His Phe
 580 585 590

Val Asn Gln Arg Ala Asp Tyr Lys Tyr Gln Lys Leu Gln Asn Tyr
 595 600 605

<210> 191

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 191

tctctattcc aaactgtggc g

21

<210> 192

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 192

tttgatgacg attcgaaggt gg

22

<210> 193

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 193

ggaaggatcc ttcaccagcc ccaattaccc aaagccgcat cctgagc

47

<210> 194

<211> 2362

<212> DNA

<213> Homo sapiens

<400> 194

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 ctgctgctgc cgccgccgcc gtgcctgcc cacagcgcca cgcgcttcga cccacctgg 180


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gagtcacctgg acgccccgcca gctgccccgag tggtttgacc aggccaaagt cggcatcttc 240
atccactggg gagtggttttc cgtgcccagc ttcggtagcg agtggttctg gtggtattgg 300
caaaaaggaaa agataccgaa gtatgtggaa tttatgaaag ataattaccc tctagtttc 360
aaatatgaag attttgacc actatttaca gcaaaatfff ttaatgcaa ccagtgggca 420
gatatttttc aggcctctgg tgccaaatac attgtcttaa cttccaaaca tcatgaaggc 480
tttaccttgt ggggggtcaga atattcgtgg aactggaatg ccatagatga ggggcccagg 540
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ttataaaaaa aagtttttct tctttcaatt ataaattaac ataagtgtac tgtaacttta 2280
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taaactcatt gtgcaaatgt aa 2362

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<210> 195

<211> 467

<212> PRT

<213> Homo sapiens

<400> 195

```

Met Arg Pro Gln Glu Leu Pro Arg Leu Ala Phe Pro Leu Leu Leu Leu
  1             5             10            15

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Leu Leu Leu Leu Leu Pro Pro Pro Pro Cys Pro Ala His Ser Ala Thr
      20             25             30

```

```

Arg Phe Asp Pro Thr Trp Glu Ser Leu Asp Ala Arg Gln Leu Pro Ala
  35             40             45

```

Trp Phe Asp Gln Ala Lys Phe Gly Ile Phe Ile His Trp Gly Val Phe
 50 55 60
 Ser Val Pro Ser Phe Gly Ser Glu Trp Phe Trp Trp Tyr Trp Gln Lys
 65 70 75 80
 Glu Lys Ile Pro Lys Tyr Val Glu Phe Met Lys Asp Asn Tyr Pro Pro
 85 90 95
 Ser Phe Lys Tyr Glu Asp Phe Gly Pro Leu Phe Thr Ala Lys Phe Phe
 100 105 110
 Asn Ala Asn Gln Trp Ala Asp Ile Phe Gln Ala Ser Gly Ala Lys Tyr
 115 120 125
 Ile Val Leu Thr Ser Lys His His Glu Gly Phe Thr Leu Trp Gly Ser
 130 135 140
 Glu Tyr Ser Trp Asn Trp Asn Ala Ile Asp Glu Gly Pro Lys Arg Asp
 145 150 155 160
 Ile Val Lys Glu Leu Glu Val Ala Ile Arg Asn Arg Thr Asp Leu Arg
 165 170 175
 Phe Gly Leu Tyr Tyr Ser Leu Phe Glu Trp Phe His Pro Leu Phe Leu
 180 185 190
 Glu Asp Glu Ser Ser Ser Phe His Lys Arg Gln Phe Pro Val Ser Lys
 195 200 205
 Thr Leu Pro Glu Leu Tyr Glu Leu Val Asn Asn Tyr Gln Pro Glu Val
 210 215 220
 Leu Trp Ser Asp Gly Asp Gly Gly Ala Pro Asp Gln Tyr Trp Asn Ser
 225 230 235 240
 Thr Gly Phe Leu Ala Trp Leu Tyr Asn Glu Ser Pro Val Arg Gly Thr
 245 250 255
 Val Val Thr Asn Asp Arg Trp Gly Ala Gly Ser Ile Cys Lys His Gly
 260 265 270
 Gly Phe Tyr Thr Cys Ser Asp Arg Tyr Asn Pro Gly His Leu Leu Pro
 275 280 285
 His Lys Trp Glu Asn Cys Met Thr Ile Asp Lys Leu Ser Trp Gly Tyr
 290 295 300
 Arg Arg Glu Ala Gly Ile Ser Asp Tyr Leu Thr Ile Glu Glu Leu Val
 305 310 315 320
 Lys Gln Leu Val Glu Thr Val Ser Cys Gly Gly Asn Leu Leu Met Asn
 325 330 335

Ile Gly Pro Thr Leu Asp Gly Thr Ile Ser Val Val Phe Glu Glu Arg
 340 345 350

Leu Arg Gln Val Gly Ser Trp Leu Lys Val Asn Gly Glu Ala Ile Tyr
 355 360 365

Glu Thr Tyr Thr Trp Arg Ser Gln Asn Asp Thr Val Thr Pro Asp Val
 370 375 380

Trp Tyr Thr Ser Lys Pro Lys Glu Lys Leu Val Tyr Ala Ile Phe Leu
 385 390 395 400

Lys Trp Pro Thr Ser Gly Gln Leu Phe Leu Gly His Pro Lys Ala Ile
 405 410 415

Leu Gly Ala Thr Glu Val Lys Leu Leu Gly His Gly Gln Pro Leu Asn
 420 425 430

Trp Ile Ser Leu Glu Gln Asn Gly Ile Met Val Glu Leu Pro Gln Leu
 435 440 445

Thr Ile His Gln Met Pro Cys Lys Trp Gly Trp Ala Leu Ala Leu Thr
 450 455 460

Asn Val Ile
 465

<210> 196

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 196

tggtttgacc aggccaagtt cgg

23

<210> 197

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 197

ggattcatcc tcaaggaaga gcgg

24

<210> 198

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 198
 aacttgccagc atcagccact ctgc

24

<210> 199
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 199
 ttccgtgccc agcttcggta gcgagtgggt ctggtgggtat tggca

45

<210> 200
 <211> 2372
 <212> DNA
 <213> Homo sapiens

<400> 200
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 catctgaggt gtttccctgg ctctgaagggt gtaggcacga tggccagggtg cttcagcctg 180
 gtgttgcttc tcaattccat ctggaccacg aggcctcctgg tccaaggctc tttgcgtgca 240
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 ttggccggca aggaccaagt tgaaacagcc ttgaaagcta gctttgaaac ttgcagctat 420
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 aaaaatgggg tgggtgtcct gatttggag gttccagtga gccgacagtt tgcagcctat 540
 tgttacaact catctgatac ttggactaac tcgtgcattc cagaaattat caccaccaa 600
 gatcccatat tcaacactca aactgcaaca caaacaacag aatttattgt cagtgcagct 660
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 gaaactagca ccatgtctac agaaactgaa ccatttgttg aaaataaagc agcattcaag 840
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 tttacaaaca agaatcagca gaaggaaatg atcgaaacca aagtagtaaa ggaggagaag 1020
 gccaatgata gcaaccctaa tgaggaatca aagaaaactg ataaaaacc agaagagtcc 1080
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 gtcctaataa tatcccactg ggagaaaagga gttttgcaaa gtgcaaggac ctaaaacatc 1440

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caaggagtc a ctgagaccaa ggctttctct actgattccg cagctcagac cttttcttca 1560
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cactgttttag aacacacaca cttacttttt ctggtctcta ccactgctga tttttctct 1860
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gactaatctt attcattttc tctaatatgg caaccattat aaccttaatt tattattaac 2220
atacctaaga agtacattgt tacctctata taccaaagca cattttaaaa gtgccattaa 2280
caaatgtatc actagccctc ctttttccaa caagaaggga ctgagagatg cagaaatatt 2340
tgtgacaaaa aattaaagca tttagaaaac tt 2372

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<210> 201

<211> 322

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic protein

<400> 201

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Met Ala Arg Cys Phe Ser Leu Val Leu Leu Leu Thr Ser Ile Trp Thr
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```

```

Thr Arg Leu Leu Val Gln Gly Ser Leu Arg Ala Glu Glu Leu Ser Ile
          20                      25                      30

```

```

Gln Val Ser Cys Arg Ile Met Gly Ile Thr Leu Val Ser Lys Lys Ala
          35                      40                      45

```

```

Asn Gln Gln Leu Asn Phe Thr Glu Ala Lys Glu Ala Cys Arg Leu Leu
          50                      55                      60

```

```

Gly Leu Ser Leu Ala Gly Lys Asp Gln Val Glu Thr Ala Leu Lys Ala
          65                      70                      75                      80

```

```

Ser Phe Glu Thr Cys Ser Tyr Gly Trp Val Gly Asp Gly Phe Val Val
          85                      90                      95

```

```

Ile Ser Arg Ile Ser Pro Asn Pro Lys Cys Gly Lys Asn Gly Val Gly
          100                      105                      110

```

```

Val Leu Ile Trp Lys Val Pro Val Ser Arg Gln Phe Ala Ala Tyr Cys
          115                      120                      125

```

```

Tyr Asn Ser Ser Asp Thr Trp Thr Asn Ser Cys Ile Pro Glu Ile Ile
          130                      135                      140

```

Thr Thr Lys Asp Pro Ile Phe Asn Thr Gln Thr Ala Thr Gln Thr Thr
145 150 155 160

Glu Phe Ile Val Ser Asp Ser Thr Tyr Ser Val Ala Ser Pro Tyr Ser
165 170 175

Thr Ile Pro Ala Pro Thr Thr Thr Pro Pro Ala Pro Ala Ser Thr Ser
180 185 190

Ile Pro Arg Arg Lys Lys Leu Ile Cys Val Thr Glu Val Phe Met Glu
195 200 205

Thr Ser Thr Met Ser Thr Glu Thr Glu Pro Phe Val Glu Asn Lys Ala
210 215 220

Ala Phe Lys Asn Glu Ala Ala Gly Phe Gly Gly Val Pro Thr Ala Leu
225 230 235 240

Leu Val Leu Ala Leu Leu Phe Phe Gly Ala Ala Ala Gly Leu Gly Phe
245 250 255

Cys Tyr Val Lys Arg Tyr Val Lys Ala Phe Pro Phe Thr Asn Lys Asn
260 265 270

Gln Gln Lys Glu Met Ile Glu Thr Lys Val Val Lys Glu Glu Lys Ala
275 280 285

Asn Asp Ser Asn Pro Asn Glu Glu Ser Lys Lys Thr Asp Lys Asn Pro
290 295 300

Glu Glu Ser Lys Ser Pro Ser Lys Thr Thr Val Arg Cys Leu Glu Ala
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Glu Val

<210> 202

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 202

gagctttcca tccaggtgtc atgc

24

<210> 203

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 203

gtcagtgcaca gtacctactc gg

22

<210> 204

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 204

tggagcagga ggagtagtag tagg

24

<210> 205

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 205

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50

<210> 206

<211> 1620

<212> DNA

<213> Homo sapiens

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<221> modified_base

<222> (973)

<223> a, t, c or g

<220>

<221> modified_base

<222> (977)

<223> a, t, c or g

<220>

<221> modified_base

<222> (996)

<223> a, t, c or g

<220>

<221> modified_base

<222> (1003)

<223> a, t, c or g

<400> 206

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<210> 207

<211> 296

<212> PRT

<213> Homo sapiens

<400> 207

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Met Ala Val Leu Ala Pro Leu Ile Ala Leu Val Tyr Ser Val Pro Arg
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Leu Ser Arg Trp Leu Ala Gln Pro Tyr Tyr Leu Leu Ser Ala Leu Leu
  20              25              30

Ser Ala Ala Phe Leu Leu Val Arg Lys Leu Pro Pro Leu Cys His Gly
  35              40              45

Leu Pro Thr Gln Arg Glu Asp Gly Asn Pro Cys Asp Phe Asp Trp Arg
  50              55              60

Glu Val Glu Ile Leu Met Phe Leu Ser Ala Ile Val Met Met Lys Asn
  65              70              75              80

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Arg Arg Ser Ile Thr Val Glu Gln His Ile Gly Asn Ile Phe Met Phe
 85 90 95
 Ser Lys Val Ala Asn Thr Ile Leu Phe Phe Arg Leu Asp Ile Arg Met
 100 105 110
 Gly Leu Leu Tyr Ile Thr Leu Cys Ile Val Phe Leu Met Thr Cys Lys
 115 120 125
 Pro Pro Leu Tyr Met Gly Pro Glu Tyr Ile Lys Tyr Phe Asn Asp Lys
 130 135 140
 Thr Ile Asp Glu Glu Leu Glu Arg Asp Lys Arg Val Thr Trp Ile Val
 145 150 155 160
 Glu Phe Phe Ala Asn Trp Ser Asn Asp Cys Gln Ser Phe Ala Pro Ile
 165 170 175
 Tyr Ala Asp Leu Ser Leu Lys Tyr Asn Cys Thr Gly Leu Asn Phe Gly
 180 185 190
 Lys Val Asp Val Gly Arg Tyr Thr Asp Val Ser Thr Arg Tyr Lys Val
 195 200 205
 Ser Thr Ser Pro Leu Thr Lys Gln Leu Pro Thr Leu Ile Leu Phe Gln
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 225 230 235 240
 Ala Val Ser Trp Thr Phe Ser Glu Glu Asn Val Ile Arg Glu Phe Asn
 245 250 255
 Leu Asn Glu Leu Tyr Gln Arg Ala Lys Lys Leu Ser Lys Ala Gly Asp
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 Asp Gly Glu Asn Lys Lys Asp Lys
 290 295

<210> 208

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 208

gcttggatat tcgcatgggc ctac

<210> 209
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 209
 tggagacaat atccctgagg 20

<210> 210
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 210
 aacagttggc cacagcatgg cagg 24

<210> 211
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 211
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<210> 212
 <211> 1985
 <212> DNA
 <213> Homo sapiens

<400> 212
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<210> 213

<211> 360

<212> PRT

<213> Homo sapiens

<400> 213

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20 25 30

Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Leu Asn Gly Val Lys
35 40 45

Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala
50 55 60

Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser
65 70 75 80

Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala
85 90 95

Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe
100 105 110

Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp

| 115 | 120 | 125 |
|--|------------------------------------|------------------------|
| Val Ser Leu Glu Ile Gln Asp 130 | Leu Arg Leu Glu Asp 135 | Tyr Gly Arg Tyr 140 |
| Arg Cys Glu Val Ile Asp Gly 145 | Leu Glu Asp Glu Ser Gly 150 155 | Leu Val Glu 160 |
| Leu Glu Leu Arg Gly Val Val Phe Pro Tyr Gln Ser Pro Asn Gly Arg 165 170 175 | | |
| Tyr Gln Phe Asn Phe His Glu Gly Gln Gln Val Cys Ala Glu Gln Ala 180 185 190 | | |
| Ala Val Val Ala Ser Phe Glu Gln Leu Phe Arg Ala Trp Glu Glu Gly 195 200 205 | | |
| Leu Asp Trp Cys Asn Ala Gly Trp Leu Gln Asp Ala Thr Val Gln Tyr 210 215 220 | | |
| Pro Ile Met Leu Pro Arg Gln Pro Cys Gly Gly Pro Gly Leu Ala Pro 225 230 235 240 | | |
| Gly Val Arg Ser Tyr Gly Pro Arg His Arg Arg Leu His Arg Tyr Asp 245 250 255 | | |
| Val Phe Cys Phe Ala Thr Ala Leu Lys Gly Arg Val Tyr Tyr Leu Glu 260 265 270 | | |
| His Pro Glu Lys Leu Thr Leu Thr Glu Ala Arg Glu Ala Cys Gln Glu 275 280 285 | | |
| Asp Asp Ala Thr Ile Ala Lys Val Gly Gln Leu Phe Ala Ala Trp Lys 290 295 300 | | |
| Phe His Gly Leu Asp Arg Cys Asp Ala Gly Trp Leu Ala Asp Gly Ser 305 310 315 320 | | |
| Val Arg Tyr Pro Val Val His Pro His Pro Asn Cys Gly Pro Pro Glu 325 330 335 | | |
| Pro Gly Val Arg Ser Phe Gly Phe Pro Asp Pro Gln Ser Arg Leu Tyr 340 345 350 | | |
| Gly Val Tyr Cys Tyr Arg Gln His 355 360 | | |

<210> 214

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 214
tgcttcgcta ctgccctc 18

<210> 215
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 215
ttcccttggtg gggtggag 18

<210> 216
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 216
agggctggaa gccagttc 18

<210> 217
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 217
agccagtga gaaatgcg 18

<210> 218
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 218
tgtccaaagt acacacacct gagg 24

<210> 219
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 219
 gatgccacga tcgccaaggt gggacagctc tttgccgcct ggaag 45

<210> 220
 <211> 1503
 <212> DNA
 <213> Homo sapiens

<400> 220
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 accttgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500
 aaa 1503

<210> 221
 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Met Trp Arg Pro Ser Val Leu Leu Leu Leu Leu Leu Arg His

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| Gly Ala Gln Gly Lys Pro Ser Pro Asp Ala Gly Pro His Gly Gln Gly | 20 | 25 | 30 |
| Arg Val His Gln Ala Ala Pro Leu Ser Asp Ala Pro His Asp Asp Ala | 35 | 40 | 45 |
| His Gly Asn Phe Gln Tyr Asp His Glu Ala Phe Leu Gly Arg Glu Val | 50 | 55 | 60 |
| Ala Lys Glu Phe Asp Gln Leu Thr Pro Glu Glu Ser Gln Ala Arg Leu | 65 | 70 | 75 |
| Gly Arg Ile Val Asp Arg Met Asp Arg Ala Gly Asp Gly Asp Gly Trp | 85 | 90 | 95 |
| Val Ser Leu Ala Glu Leu Arg Ala Trp Ile Ala His Thr Gln Gln Arg | 100 | 105 | 110 |
| His Ile Arg Asp Ser Val Ser Ala Ala Trp Asp Thr Tyr Asp Thr Asp | 115 | 120 | 125 |
| Arg Asp Gly Arg Val Gly Trp Glu Glu Leu Arg Asn Ala Thr Tyr Gly | 130 | 135 | 140 |
| His Tyr Ala Pro Gly Glu Glu Phe His Asp Val Glu Asp Ala Glu Thr | 145 | 150 | 155 |
| Tyr Lys Lys Met Leu Ala Arg Asp Glu Arg Arg Phe Arg Val Ala Asp | 165 | 170 | 175 |
| Gln Asp Gly Asp Ser Met Ala Thr Arg Glu Glu Leu Thr Ala Phe Leu | 180 | 185 | 190 |
| His Pro Glu Glu Phe Pro His Met Arg Asp Ile Val Ile Ala Glu Thr | 195 | 200 | 205 |
| Leu Glu Asp Leu Asp Arg Asn Lys Asp Gly Tyr Val Gln Val Glu Glu | 210 | 215 | 220 |
| Tyr Ile Ala Asp Leu Tyr Ser Ala Glu Pro Gly Glu Glu Glu Pro Ala | 225 | 230 | 235 |
| Trp Val Gln Thr Glu Arg Gln Gln Phe Arg Asp Phe Arg Asp Leu Asn | 245 | 250 | 255 |
| Lys Asp Gly His Leu Asp Gly Ser Glu Val Gly His Trp Val Leu Pro | 260 | 265 | 270 |
| Pro Ala Gln Asp Gln Pro Leu Val Glu Ala Asn His Leu Leu His Glu | 275 | 280 | 285 |

Ser Asp Thr Asp Lys Asp Gly Arg Leu Ser Lys Ala Glu Ile Leu Gly
 290 295 300

Asn Trp Asn Met Phe Val Gly Ser Gln Ala Thr Asn Tyr Gly Glu Asp
 305 310 315 320

Leu Thr Arg His His Asp Glu Leu
 325

<210> 222

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 222

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20

<210> 223

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 223

gaaatcctgg gtaattgg

18

<210> 224

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 224

gtgcgcggtg ctcacagctc atc

23

<210> 225

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 225
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44

<210> 226
 <211> 2403
 <212> DNA
 <213> Homo sapiens

<400> 226
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 aaa 2403

<210> 227

<213> Homo sapiens

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Thr Cys Phe Thr Arg Gly Leu Asp Ile Arg Lys Glu Lys Ala Asp Val
35 40 45

Leu Cys Pro Gly Gly Cys Pro Leu Glu Glu Phe Ser Val Tyr Gly Asn
50 55 60

Ile Val Tyr Ala Ser Val Ser Ser Ile Cys Gly Ala Ala Val His Arg
55 70 75 80

Gly Val Ile Ser Asn Ser Gly Gly Pro Val Arg Val Tyr Ser Leu Pro
85 90 95

Gly Arg Glu Asn Tyr Ser Ser Val Asp Ala Asn Gly Ile Gln Ser Gln
100 105 110

Met Leu Ser Arg Trp Ser Ala Ser Phe Thr Val Thr Lys Gly Lys Ser
115 120 125

Ser Thr Gln Glu Ala Thr Gly Gln Ala Val Ser Thr Ala His Pro Pro
130 135 140

Thr Gly Lys Arg Leu Lys Lys Thr Pro Glu Lys Lys Thr Gly Asn Lys
145 150 155 160

Asp Cys Lys Ala Asp Ile Ala Phe Leu Ile Asp Gly Ser Phe Asn Ile
165 170 175

Gly Gln Arg Arg Phe Asn Leu Gln Lys Asn Phe Val Gly Lys Val Ala
180 185 190

Leu Met Leu Gly Ile Gly Thr Glu Gly Pro His Val Gly Leu Val Gln
195 200 205

Ala Ser Glu His Pro Lys Ile Glu Phe Tyr Leu Lys Asn Phe Thr Ser
210 215 220

Ala Lys Asp Val Leu Phe Ala Ile Lys Glu Val Gly Phe Arg Gly Gly
225 230 235 240

Asn Ser Asn Thr Gly Lys Ala Leu Lys His Thr Ala Gln Lys Phe Phe
245 250 255

Thr Val Asp Ala Gly Val Arg Lys Gly Ile Pro Lys Val Val Val Val
 260 265 270
 Phe Ile Asp Gly Trp Pro Ser Asp Asp Ile Glu Glu Ala Gly Ile Val
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 Ala Arg Glu Phe Gly Val Asn Val Phe Ile Val Ser Val Ala Lys Pro
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 Ile Pro Glu Glu Leu Gly Met Val Gln Asp Val Thr Phe Val Asp Lys
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 Ala Val Cys Arg Asn Asn Gly Phe Phe Ser Tyr His Met Pro Asn Trp
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 Phe Gly Thr Thr Lys Tyr Val Lys Pro Leu Val Gln Lys Leu Cys Thr
 340 345 350
 His Glu Gln Met Met Cys Ser Lys Thr Cys Tyr Asn Ser Val Asn Ile
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 Ala Phe Leu Ile Asp Gly Ser Ser Ser Val Gly Asp Ser Asn Phe Arg
 370 375 380
 Leu Met Leu Glu Phe Val Ser Asn Ile Ala Lys Thr Phe Glu Ile Ser
 385 390 395 400
 Asp Ile Gly Ala Lys Ile Ala Ala Val Gln Phe Thr Tyr Asp Gln Arg
 405 410 415
 Thr Glu Phe Ser Phe Thr Asp Tyr Ser Thr Lys Glu Asn Val Leu Ala
 420 425 430
 Val Ile Arg Asn Ile Arg Tyr Met Ser Gly Gly Thr Ala Thr Gly Asp
 435 440 445
 Ala Ile Ser Phe Thr Val Arg Asn Val Phe Gly Pro Ile Arg Glu Ser
 450 455 460
 Pro Asn Lys Asn Phe Leu Val Ile Val Thr Asp Gly Gln Ser Tyr Asp
 465 470 475 480
 Asp Val Gln Gly Pro Ala Ala Ala Ala His Asp Ala Gly Ile Thr Ile
 485 490 495
 Phe Ser Val Gly Val Ala Trp Ala Pro Leu Asp Asp Leu Lys Asp Met
 500 505 510
 Ala Ser Lys Pro Lys Glu Ser His Ala Phe Phe Thr Arg Glu Phe Thr
 515 520 525
 Gly Leu Glu Pro Ile Val Ser Asp Val Ile Arg Gly Ile Cys Arg Asp
 530 535 540

Phe Leu Glu Ser Gln Gln
545 550

<210> 228

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 228

tggtctcgca caccgatc

18

<210> 229

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 229

ctgctgtcca caggggag

18

<210> 230

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 230

ccttgaagca tactgctc

18

<210> 231

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide probe

<400> 231

gagatagcaa tttccgcc

18

<210> 232

<211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 232
 ttcttcaaga gggcagcc 18

<210> 233
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 233
 cttggcacca atgtccgaga ttcc 24

<210> 234
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide probe

<400> 234
 gctctgagga aggtgacgcg cggggcctcc gaacccttgg ccttg 45

<210> 235
 <211> 2586
 <212> DNA
 <213> Homo sapiens

<400> 235
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 catgccgggg ccagaggatg ctctgcaccc gggacagtga gtgctgtgga gaccagctgt 720

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<210> 236

<211> 350

<212> PRT

<213> Homo sapiens

<400> 236

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Met Gln Arg Leu Gly Ala Thr Leu Leu Cys Leu Leu Leu Ala Ala Ala
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Val Pro Thr Ala Pro Ala Pro Ala Pro Thr Ala Thr Ser Ala Pro Val
          20             25             30

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```

Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala Thr Leu Asn
          35             40             45

```

```

Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
          50             55             60

```

```

Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys
          65             70             75             80

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Ala Ser Ser Glu Val Asn Leu Ala Asn Leu Pro Pro Ser Tyr His Asn
 85 90 95
 Glu Thr Asn Thr Asp Thr Lys Val Gly Asn Asn Thr Ile His Val His
 100 105 110
 Arg Glu Ile His Lys Ile Thr Asn Asn Gln Thr Gly Gln Met Val Phe
 115 120 125
 Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Arg Arg Ser
 130 135 140
 His Glu Cys Ile Ile Asp Glu Asp Cys Gly Pro Ser Met Tyr Cys Gln
 145 150 155 160
 Phe Ala Ser Phe Gln Tyr Thr Cys Gln Pro Cys Arg Gly Gln Arg Met
 165 170 175
 Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Val Trp
 180 185 190
 Gly His Cys Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys
 195 200 205
 Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg
 210 215 220
 Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu
 225 230 235 240
 Cys His Asp Pro Ala Ser Arg Leu Leu Asp Leu Ile Thr Trp Glu Leu
 245 250 255
 Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu
 260 265 270
 Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys Pro Thr Phe
 275 280 285
 Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu Pro Arg Glu Val
 290 295 300
 Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu Glu Val Arg Gln Glu
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 340 345 350

<210> 237

<211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 237
 ggagctgcac cccttgc 17

<210> 238
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 238
 ggaggactgt gccaccatga gagactcttc aaacccaagg caaaattgg 49

<210> 239
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 239
 gcagagcgga gatgcagcgg cttg 24

<210> 240
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 240
 ttggcagctt catggagg 18

<210> 241
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 241
 cctgggcaaa aatgcaac 18

<210> 242
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 242
 ctccagctcc tggcgacact cctc

24

<210> 243
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 243
 ggctctcagc taccgcgag gagcgaggcc accctcaatg agatg

45

<210> 244
 <211> 3579
 <212> DNA
 <213> Homo Sapien

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<210> 245

<211> 713

<212> PRT

<213> Homo Sapien

<400> 245

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| Ala | Thr | Ala | Thr | Val | Pro | Val | Val | Pro | Trp | His | Val | Pro | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Gln | Cys | Ala | Cys | Gln | Ile | Arg | Pro | Trp | Tyr | Thr | Pro | Arg | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ser | Tyr | Arg | Glu | Ala | Thr | Thr | Val | Asp | Cys | Asn | Asp | Leu | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Ala | Val | Pro | Pro | Ala | Leu | Pro | Ala | Gly | Thr | Gln | Thr | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gln | Ser | Asn | Ser | Ile | Val | Arg | Val | Asp | Gln | Ser | Glu | Leu | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Leu | Ala | Asn | Leu | Thr | Glu | Leu | Asp | Leu | Ser | Gln | Asn | Ser | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Asp | Ala | Arg | Asp | Cys | Asp | Phe | His | Ala | Leu | Pro | Gln | Leu | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Leu | His | Leu | Glu | Glu | Asn | Gln | Leu | Thr | Arg | Leu | Glu | Asp | His |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Phe | Ala | Gly | Leu | Ala | Ser | Leu | Gln | Glu | Leu | Tyr | Leu | Asn | His |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Gln | Leu | Tyr | Arg | Ile | Ala | Pro | Arg | Ala | Phe | Ser | Gly | Leu | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asn | Leu | Leu | Arg | Leu | His | Leu | Asn | Ser | Asn | Leu | Leu | Arg | Ala | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Ser | Arg | Trp | Phe | Glu | Met | Leu | Pro | Asn | Leu | Glu | Ile | Leu | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Gly | Gly | Asn | Lys | Val | Asp | Ala | Ile | Leu | Asp | Met | Asn | Phe | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Leu | Ala | Asn | Leu | Arg | Ser | Leu | Val | Leu | Ala | Gly | Met | Asn | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Arg | Glu | Ile | Ser | Asp | Tyr | Ala | Leu | Glu | Gly | Leu | Gln | Ser | Leu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Leu | Ser | Phe | Tyr | Asp | Asn | Gln | Leu | Ala | Arg | Val | Pro | Arg | Arg | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Leu | Glu | Gln | Val | Pro | Gly | Leu | Lys | Phe | Leu | Asp | Leu | Asn | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asn | Pro | Leu | Gln | Arg | Val | Gly | Pro | Gly | Asp | Phe | Ala | Asn | Met | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Leu | Lys | Glu | Leu | Gly | Leu | Asn | Asn | Met | Glu | Glu | Leu | Val | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Asp | Lys | Phe | Ala | Leu | Val | Asn | Leu | Pro | Glu | Leu | Thr | Lys | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asp | Ile | Thr | Asn | Asn | Pro | Arg | Leu | Ser | Phe | Ile | His | Pro | Arg | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Phe | His | His | Leu | Pro | Gln | Met | Glu | Thr | Leu | Met | Leu | Asn | Asn | Asn | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ala | Leu | Ser | Ala | Leu | His | Gln | Gln | Thr | Val | Glu | Ser | Leu | Pro | Asn | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Leu | Gln | Glu | Val | Gly | Leu | His | Gly | Asn | Pro | Ile | Arg | Cys | Asp | Cys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Val | Ile | Arg | Trp | Ala | Asn | Ala | Thr | Gly | Thr | Arg | Val | Arg | Phe | Ile | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Glu | Pro | Gln | Ser | Thr | Leu | Cys | Ala | Glu | Pro | Pro | Asp | Leu | Gln | Arg | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Leu | Pro | Val | Arg | Glu | Val | Pro | Phe | Arg | Glu | Met | Thr | Asp | His | Cys | |

| | | |
|-------------------------------------|-------------------------|-----|
| 410 | 415 | 420 |
| Leu Pro Leu Ile Ser Pro Arg Ser Phe | Pro Pro Ser Leu Gln Val | |
| 425 | 430 | 435 |
| Ala Ser Gly Glu Ser Met Val Leu His | Cys Arg Ala Leu Ala Glu | |
| 440 | 445 | 450 |
| Pro Glu Pro Glu Ile Tyr Trp Val Thr | Pro Ala Gly Leu Arg Leu | |
| 455 | 460 | 465 |
| Thr Pro Ala His Ala Gly Arg Arg Tyr | Arg Val Tyr Pro Glu Gly | |
| 470 | 475 | 480 |
| Thr Leu Glu Leu Arg Arg Val Thr Ala | Glu Glu Ala Gly Leu Tyr | |
| 485 | 490 | 495 |
| Thr Cys Val Ala Gln Asn Leu Val Gly | Ala Asp Thr Lys Thr Val | |
| 500 | 505 | 510 |
| Ser Val Val Val Gly Arg Ala Leu Leu | Gln Pro Gly Arg Asp Glu | |
| 515 | 520 | 525 |
| Gly Gln Gly Leu Glu Leu Arg Val Gln | Glu Thr His Pro Tyr His | |
| 530 | 535 | 540 |
| Ile Leu Leu Ser Trp Val Thr Pro Pro | Asn Thr Val Ser Thr Asn | |
| 545 | 550 | 555 |
| Leu Thr Trp Ser Ser Ala Ser Ser Leu | Arg Gly Gln Gly Ala Thr | |
| 560 | 565 | 570 |
| Ala Leu Ala Arg Leu Pro Arg Gly Thr | His Ser Tyr Asn Ile Thr | |
| 575 | 580 | 585 |
| Arg Leu Leu Gln Ala Thr Glu Tyr Trp | Ala Cys Leu Gln Val Ala | |
| 590 | 595 | 600 |
| Phe Ala Asp Ala His Thr Gln Leu Ala | Cys Val Trp Ala Arg Thr | |
| 605 | 610 | 615 |
| Lys Glu Ala Thr Ser Cys His Arg Ala | Leu Gly Asp Arg Pro Gly | |
| 620 | 625 | 630 |
| Leu Ile Ala Ile Leu Ala Leu Ala Val | Leu Leu Leu Ala Ala Gly | |
| 635 | 640 | 645 |
| Leu Ala Ala His Leu Gly Thr Gly Gln | Pro Arg Lys Gly Val Gly | |
| 650 | 655 | 660 |
| Gly Arg Arg Pro Leu Pro Pro Ala Trp | Ala Phe Trp Gly Trp Ser | |
| 665 | 670 | 675 |

Ala Pro Ser Val Arg Val Val Ser Ala Pro Leu Val Leu Pro Trp
680 685 690

Asn Pro Gly Arg Lys Leu Pro Arg Ser Ser Glu Gly Glu Thr Leu
695 700 705

Leu Pro Pro Leu Ser Gln Asn Ser
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 a 3401

<210> 250

<211> 546

<212> PRT

<213> Homo Sapien

<400> 250

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gln | Thr | Ile | Ile | Lys | Val | Ile | Lys | Phe | Ile | Leu | Ile | Ile |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Cys | Tyr | Thr | Val | Tyr | Tyr | Val | His | Asn | Ile | Lys | Phe | Asp | Val | Asp |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Cys | Thr | Val | Asp | Ile | Glu | Ser | Leu | Thr | Gly | Tyr | Arg | Thr | Tyr | Arg |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Cys | Ala | His | Pro | Leu | Ala | Thr | Leu | Phe | Lys | Ile | Leu | Ala | Ser | Phe |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Tyr | Ile | Ser | Leu | Val | Ile | Phe | Tyr | Gly | Leu | Ile | Cys | Met | Tyr | Thr |
| | | | | 65 | | | | | 70 | | | | 75 | |
| Leu | Trp | Trp | Met | Leu | Arg | Arg | Ser | Leu | Lys | Lys | Tyr | Ser | Phe | Glu |
| | | | | 80 | | | | | 85 | | | | 90 | |
| Ser | Ile | Arg | Glu | Glu | Ser | Ser | Tyr | Ser | Asp | Ile | Pro | Asp | Val | Lys |

| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asn | Asp | Phe | Ala | Phe | Met | Leu | His | Leu | Ile | Asp | Gln | Tyr | Asp | Pro | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Leu | Tyr | Ser | Lys | Arg | Phe | Ala | Val | Phe | Leu | Ser | Glu | Val | Ser | Glu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Asn | Lys | Leu | Arg | Gln | Leu | Asn | Leu | Asn | Asn | Glu | Trp | Thr | Leu | Asp | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Lys | Leu | Arg | Gln | Arg | Leu | Thr | Lys | Asn | Ala | Gln | Asp | Lys | Leu | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | His | Leu | Phe | Met | Leu | Ser | Gly | Ile | Pro | Asp | Thr | Val | Phe | Asp | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Leu | Val | Glu | Leu | Glu | Val | Leu | Lys | Leu | Glu | Leu | Ile | Pro | Asp | Val | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Thr | Ile | Pro | Pro | Ser | Ile | Ala | Gln | Leu | Thr | Gly | Leu | Lys | Glu | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Trp | Leu | Tyr | His | Thr | Ala | Ala | Lys | Ile | Glu | Ala | Pro | Ala | Leu | Ala | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Phe | Leu | Arg | Glu | Asn | Leu | Arg | Ala | Leu | His | Ile | Lys | Phe | Thr | Asp | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ile | Lys | Glu | Ile | Pro | Leu | Trp | Ile | Tyr | Ser | Leu | Lys | Thr | Leu | Glu | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Glu | Leu | His | Leu | Thr | Gly | Asn | Leu | Ser | Ala | Glu | Asn | Asn | Arg | Tyr | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ile | Val | Ile | Asp | Gly | Leu | Arg | Glu | Leu | Lys | Arg | Leu | Lys | Val | Leu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Arg | Leu | Lys | Ser | Asn | Leu | Ser | Lys | Leu | Pro | Gln | Val | Val | Thr | Asp | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Val | Gly | Val | His | Leu | Gln | Lys | Leu | Ser | Ile | Asn | Asn | Glu | Gly | Thr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Lys | Leu | Ile | Val | Leu | Asn | Ser | Leu | Lys | Lys | Met | Ala | Asn | Leu | Thr | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Glu | Leu | Glu | Leu | Ile | Arg | Cys | Asp | Leu | Glu | Arg | Ile | Pro | His | Ser | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Ile | Phe | Ser | Leu | His | Asn | Leu | Gln | Glu | Ile | Asp | Leu | Lys | Asp | Asn | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Lys | Thr | Ile | Glu | Glu | Ile | Ile | Ser | Phe | Gln | His | Leu | His |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Arg | Leu | Thr | Cys | Leu | Lys | Leu | Trp | Tyr | Asn | His | Ile | Ala | Tyr | Ile |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Ile | Gln | Ile | Gly | Asn | Leu | Thr | Asn | Leu | Glu | Arg | Leu | Tyr | Leu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Arg | Asn | Lys | Ile | Glu | Lys | Ile | Pro | Thr | Gln | Leu | Phe | Tyr | Cys |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Arg | Lys | Leu | Arg | Tyr | Leu | Asp | Leu | Ser | His | Asn | Asn | Leu | Thr | Phe |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Pro | Ala | Asp | Ile | Gly | Leu | Leu | Gln | Asn | Leu | Gln | Asn | Leu | Ala |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ile | Thr | Ala | Asn | Arg | Ile | Glu | Thr | Leu | Pro | Pro | Glu | Leu | Phe | Gln |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Cys | Arg | Lys | Leu | Arg | Ala | Leu | His | Leu | Gly | Asn | Asn | Val | Leu | Gln |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ser | Leu | Pro | Ser | Arg | Val | Gly | Glu | Leu | Thr | Asn | Leu | Thr | Gln | Ile |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Glu | Leu | Arg | Gly | Asn | Arg | Leu | Glu | Cys | Leu | Pro | Val | Glu | Leu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Glu | Cys | Pro | Leu | Leu | Lys | Arg | Ser | Gly | Leu | Val | Val | Glu | Glu | Asp |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Leu | Phe | Asn | Thr | Leu | Pro | Pro | Glu | Val | Lys | Glu | Arg | Leu | Trp | Arg |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ala | Asp | Lys | Glu | Gln | Ala | | | | | | | | | |
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<400> 251

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<210> 252

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic Oligonucleotide Probe

<400> 252

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<210> 253

<211> 47

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<213> Artificial Sequence

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<210> 254

<211> 1650

<212> DNA

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<211> 452

<212> PRT

<213> Homo Sapien

<400> 255

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| Met | Glu | Leu | Ala | Leu | Arg | Arg | Ser | Pro | Val | Pro | Arg | Trp | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Leu | Pro | Leu | Leu | Leu | Gly | Leu | Asn | Ala | Gly | Ala | Val | Ile | Asp |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Trp | Pro | Thr | Glu | Glu | Gly | Lys | Glu | Val | Trp | Asp | Tyr | Val | Thr | Val |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Asp | Ala | Tyr | Met | Phe | Trp | Trp | Leu | Tyr | Tyr | Ala | Thr | Asn | 50 | 55 | 60 |
| Ser | Cys | Lys | Asn | Phe | Ser | Glu | Leu | Pro | Leu | Val | Met | Trp | Leu | Gln | 65 | 70 | 75 |
| Gly | Gly | Pro | Gly | Gly | Ser | Ser | Thr | Gly | Phe | Gly | Asn | Phe | Glu | Glu | 80 | 85 | 90 |
| Ile | Gly | Pro | Leu | Asp | Ser | Asp | Leu | Lys | Pro | Arg | Lys | Thr | Thr | Trp | 95 | 100 | 105 |
| Leu | Gln | Ala | Ala | Ser | Leu | Leu | Phe | Val | Asp | Asn | Pro | Val | Gly | Thr | 110 | 115 | 120 |
| Gly | Phe | Ser | Tyr | Val | Asn | Gly | Ser | Gly | Ala | Tyr | Ala | Lys | Asp | Leu | 125 | 130 | 135 |
| Ala | Met | Val | Ala | Ser | Asp | Met | Met | Val | Leu | Leu | Lys | Thr | Phe | Phe | 140 | 145 | 150 |
| Ser | Cys | His | Lys | Glu | Phe | Gln | Thr | Val | Pro | Phe | Tyr | Ile | Phe | Ser | 155 | 160 | 165 |
| Glu | Ser | Tyr | Gly | Gly | Lys | Met | Ala | Ala | Gly | Ile | Gly | Leu | Glu | Leu | 170 | 175 | 180 |
| Tyr | Lys | Ala | Ile | Gln | Arg | Gly | Thr | Ile | Lys | Cys | Asn | Phe | Ala | Gly | 185 | 190 | 195 |
| Val | Ala | Leu | Gly | Asp | Ser | Trp | Ile | Ser | Pro | Val | Asp | Ser | Val | Leu | 200 | 205 | 210 |
| Ser | Trp | Gly | Pro | Tyr | Leu | Tyr | Ser | Met | Ser | Leu | Leu | Glu | Asp | Lys | 215 | 220 | 225 |
| Gly | Leu | Ala | Glu | Val | Ser | Lys | Val | Ala | Glu | Gln | Val | Leu | Asn | Ala | 230 | 235 | 240 |
| Val | Asn | Lys | Gly | Leu | Tyr | Arg | Glu | Ala | Thr | Glu | Leu | Trp | Gly | Lys | 245 | 250 | 255 |
| Ala | Glu | Met | Ile | Ile | Glu | Gln | Asn | Thr | Asp | Gly | Val | Asn | Phe | Tyr | 260 | 265 | 270 |
| Asn | Ile | Leu | Thr | Lys | Ser | Thr | Pro | Thr | Ser | Thr | Met | Glu | Ser | Ser | 275 | 280 | 285 |
| Leu | Glu | Phe | Thr | Gln | Ser | His | Leu | Val | Cys | Leu | Cys | Gln | Arg | His | 290 | 295 | 300 |
| Val | Arg | His | Leu | Gln | Arg | Asp | Ala | Leu | Ser | Gln | Leu | Met | Asn | Gly | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 305 | 310 | 315 |
| Pro Ile Arg Lys Lys Leu Lys Ile Ile | Pro Glu Asp Gln Ser Trp | |
| 320 | 325 | 330 |
| Gly Gly Gln Ala Thr Asn Val Phe Val | Asn Met Glu Glu Asp Phe | |
| 335 | 340 | 345 |
| Met Lys Pro Val Ile Ser Ile Val Asp | Glu Leu Leu Glu Ala Gly | |
| 350 | 355 | 360 |
| Ile Asn Val Thr Val Tyr Asn Gly Gln | Leu Asp Leu Ile Val Asp | |
| 365 | 370 | 375 |
| Thr Met Gly Gln Glu Ala Trp Val Arg | Lys Leu Lys Trp Pro Glu | |
| 380 | 385 | 390 |
| Leu Pro Lys Phe Ser Gln Leu Lys Trp | Lys Ala Leu Tyr Ser Asp | |
| 395 | 400 | 405 |
| Pro Lys Ser Leu Glu Thr Ser Ala Phe | Val Lys Ser Tyr Lys Asn | |
| 410 | 415 | 420 |
| Leu Ala Phe Tyr Trp Ile Leu Lys Ala | Gly His Met Val Pro Ser | |
| 425 | 430 | 435 |
| Asp Gln Gly Asp Met Ala Leu Lys Met | Met Arg Leu Val Thr Gln | |
| 440 | 445 | 450 |

Gln Glu

<210> 256

<211> 1100

<212> DNA

<213> Homo Sapien

<400> 256

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tgagaggac gccgaactcg ggcgttgcc gtggcagggg agcctgcgcc 200
tgtgggatcc ccacgtatgc ggagtgcgc tgctcagcca ccgctgggca 250
ctcacggcgg cgcactgctt tgaaacctat agtgacctta gtgatccctc 300
cgggtggatg gtccagtttg gccagctgac ttccatgcca tccttctgga 350
gcctgcaggc ctactacacc cgttacttcg tatcgaatat ctatctgagc 400

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<210> 257
<211> 314
<212> PRT
<213> Homo Sapien
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Ala Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser

                      20                      25                      30

Gly Pro Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly
                      35                      40                      45

Glu Asp Ala Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg
                      50                      55                      60

Leu Trp Asp Ser His Val Cys Gly Val Ser Leu Leu Ser His Arg
                      65                      70                      75

Trp Ala Leu Thr Ala Ala His Cys Phe Glu Thr Tyr Ser Asp Leu
                      80                      85                      90

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Asp | Pro | Ser | Gly | Trp | Met | Val | Gln | Phe | Gly | Gln | Leu | Thr | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Met | Pro | Ser | Phe | Trp | Ser | Leu | Gln | Ala | Tyr | Tyr | Thr | Arg | Tyr | Phe | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Ser | Asn | Ile | Tyr | Leu | Ser | Pro | Arg | Tyr | Leu | Gly | Asn | Ser | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Tyr | Asp | Ile | Ala | Leu | Val | Lys | Leu | Ser | Ala | Pro | Val | Thr | Tyr | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Lys | His | Ile | Gln | Pro | Ile | Cys | Leu | Gln | Ala | Ser | Thr | Phe | Glu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Asn | Arg | Thr | Asp | Cys | Trp | Val | Thr | Gly | Trp | Gly | Tyr | Ile | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Glu | Asp | Glu | Ala | Leu | Pro | Ser | Pro | His | Thr | Leu | Gln | Glu | Val | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | Ala | Ile | Ile | Asn | Asn | Ser | Met | Cys | Asn | His | Leu | Phe | Leu | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | Ser | Phe | Arg | Lys | Asp | Ile | Phe | Gly | Asp | Met | Val | Cys | Ala | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Ala | Gln | Gly | Gly | Lys | Asp | Ala | Cys | Phe | Gly | Asp | Ser | Gly | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Leu | Ala | Cys | Asn | Lys | Asn | Gly | Leu | Trp | Tyr | Gln | Ile | Gly | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Ser | Trp | Gly | Val | Gly | Cys | Gly | Arg | Pro | Asn | Arg | Pro | Gly | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Tyr | Thr | Asn | Ile | Ser | His | His | Phe | Glu | Trp | Ile | Gln | Lys | Leu | Met | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Gln | Ser | Gly | Met | Ser | Gln | Pro | Asp | Pro | Ser | Trp | Pro | Leu | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Phe | Phe | Pro | Leu | Leu | Trp | Ala | Leu | Pro | Leu | Leu | Gly | Pro | Val | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 258

<211> 2427

<212> DNA

<213> Homo Sapien

<400> 258

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<210> 259

<211> 556

<212> PRT

<213> Homo Sapien

<400> 259

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Gln | Ala | Cys | Leu | Leu | Gly | Leu | Phe | Ala | Leu | Ile | Leu |
| 1 | | | | | 5 | | | 10 | | | | | 15 | |

Ser Gly Lys Cys Ser Tyr Ser Pro Glu Pro Asp Gln Arg Arg Thr

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Pro | Pro | Gly | Trp | Val | Ser | Leu | Gly | Arg | Ala | Asp | Pro | Glu | Glu | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Glu | Leu | Ser | Leu | Thr | Phe | Ala | Leu | Arg | Gln | Gln | Asn | Val | Glu | Arg | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Leu | Ser | Glu | Leu | Val | Gln | Ala | Val | Ser | Asp | Pro | Ser | Ser | Pro | Gln | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Tyr | Gly | Lys | Tyr | Leu | Thr | Leu | Glu | Asn | Val | Ala | Asp | Leu | Val | Arg | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Pro | Ser | Pro | Leu | Thr | Leu | His | Thr | Val | Gln | Lys | Trp | Leu | Leu | Ala | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ala | Gly | Ala | Gln | Lys | Cys | His | Ser | Val | Ile | Thr | Gln | Asp | Phe | Leu | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Thr | Cys | Trp | Leu | Ser | Ile | Arg | Gln | Ala | Glu | Leu | Leu | Leu | Pro | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ala | Glu | Phe | His | His | Tyr | Val | Gly | Gly | Pro | Thr | Glu | Thr | His | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Val | Arg | Ser | Pro | His | Pro | Tyr | Gln | Leu | Pro | Gln | Ala | Leu | Ala | Pro | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| His | Val | Asp | Phe | Val | Gly | Gly | Leu | His | Arg | Phe | Pro | Pro | Thr | Ser | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ser | Leu | Arg | Gln | Arg | Pro | Glu | Pro | Gln | Val | Thr | Gly | Thr | Val | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | His | Leu | Gly | Val | Thr | Pro | Ser | Val | Ile | Arg | Lys | Arg | Tyr | Asn | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Thr | Ser | Gln | Asp | Val | Gly | Ser | Gly | Thr | Ser | Asn | Asn | Ser | Gln | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ala | Cys | Ala | Gln | Phe | Leu | Glu | Gln | Tyr | Phe | His | Asp | Ser | Asp | Leu | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ala | Gln | Phe | Met | Arg | Leu | Phe | Gly | Gly | Asn | Phe | Ala | His | Gln | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ser | Val | Ala | Arg | Val | Val | Gly | Gln | Gln | Gly | Arg | Gly | Arg | Ala | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ile | Glu | Ala | Ser | Leu | Asp | Val | Gln | Tyr | Leu | Met | Ser | Ala | Gly | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Ser | Thr | Trp | Val | Tyr | Ser | Ser | Pro | Gly | Arg | His | Glu | Gly | 290 | 295 | 300 |
| Gln | Glu | Pro | Phe | Leu | Gln | Trp | Leu | Met | Leu | Leu | Ser | Asn | Glu | Ser | 305 | 310 | 315 |
| Ala | Leu | Pro | His | Val | His | Thr | Val | Ser | Tyr | Gly | Asp | Asp | Glu | Asp | 320 | 325 | 330 |
| Ser | Leu | Ser | Ser | Ala | Tyr | Ile | Gln | Arg | Val | Asn | Thr | Glu | Leu | Met | 335 | 340 | 345 |
| Lys | Ala | Ala | Ala | Arg | Gly | Leu | Thr | Leu | Leu | Phe | Ala | Ser | Gly | Asp | 350 | 355 | 360 |
| Ser | Gly | Ala | Gly | Cys | Trp | Ser | Val | Ser | Gly | Arg | His | Gln | Phe | Arg | 365 | 370 | 375 |
| Pro | Thr | Phe | Pro | Ala | Ser | Ser | Pro | Tyr | Val | Thr | Thr | Val | Gly | Gly | 380 | 385 | 390 |
| Thr | Ser | Phe | Gln | Glu | Pro | Phe | Leu | Ile | Thr | Asn | Glu | Ile | Val | Asp | 395 | 400 | 405 |
| Tyr | Ile | Ser | Gly | Gly | Gly | Phe | Ser | Asn | Val | Phe | Pro | Arg | Pro | Ser | 410 | 415 | 420 |
| Tyr | Gln | Glu | Glu | Ala | Val | Thr | Lys | Phe | Leu | Ser | Ser | Ser | Pro | His | 425 | 430 | 435 |
| Leu | Pro | Pro | Ser | Ser | Tyr | Phe | Asn | Ala | Ser | Gly | Arg | Ala | Tyr | Pro | 440 | 445 | 450 |
| Asp | Val | Ala | Ala | Leu | Ser | Asp | Gly | Tyr | Trp | Val | Val | Ser | Asn | Arg | 455 | 460 | 465 |
| Val | Pro | Ile | Pro | Trp | Val | Ser | Gly | Thr | Ser | Ala | Ser | Thr | Pro | Val | 470 | 475 | 480 |
| Phe | Gly | Gly | Ile | Leu | Ser | Leu | Ile | Asn | Glu | His | Arg | Ile | Leu | Ser | 485 | 490 | 495 |
| Gly | Arg | Pro | Pro | Leu | Gly | Phe | Leu | Asn | Pro | Arg | Leu | Tyr | Gln | Gln | 500 | 505 | 510 |
| His | Gly | Ala | Gly | Leu | Phe | Asp | Val | Thr | Arg | Gly | Cys | His | Glu | Ser | 515 | 520 | 525 |
| Cys | Leu | Asp | Glu | Glu | Val | Glu | Gly | Gln | Gly | Phe | Cys | Ser | Gly | Pro | 530 | 535 | 540 |
| Gly | Trp | Asp | Pro | Val | Thr | Gly | Trp | Gly | Thr | Pro | Thr | Ser | Gln | Leu | 545 | 550 | 555 |

Cys

<210> 260

<211> 1638

<212> DNA

<213> Homo Sapien

<400> 260

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tccctgtcgt cttgccccag tctaccctca atttagccaa gccagacttt 250
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taagggaact ccactgcca cttacgaaga ggccaagcaa tatctgtctt 350
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ctatgtgagg atgtggaaga gacagcagca gaagtgggag cgaaaaatta 1100

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 ccaaattggt tttgtcatt ggcgtgcaca cgtgtgtgtg tgtgtgtgtg 1350
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<210> 261

<211> 383

<212> PRT

<213> Homo Sapien

<400> 261

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Pro | Gly | Leu | Leu | Phe | Leu | Leu | Phe | Phe | Leu | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Gly | Gln | Val | Ser | Pro | Tyr | Ser | Ala | Pro | Trp | Lys | Pro |
| | | | 20 | | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Trp | Pro | Ala | Tyr | Arg | Leu | Pro | Val | Val | Leu | Pro | Gln | Ser | Thr |
| | | | 35 | | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | Leu | Ala | Lys | Pro | Asp | Phe | Gly | Ala | Glu | Ala | Lys | Leu | Glu |
| | | | 50 | | | | | 55 | | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Ser | Ser | Cys | Gly | Pro | Gln | Cys | His | Lys | Gly | Thr | Pro | Leu |
| | | | 65 | | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Tyr | Glu | Glu | Ala | Lys | Gln | Tyr | Leu | Ser | Tyr | Glu | Thr | Leu |
| | | | 80 | | | | | 85 | | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ala | Asn | Gly | Ser | Arg | Thr | Glu | Thr | Gln | Val | Gly | Ile | Tyr | Ile |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Ser | Gly | Asp | Gly | Ala | Gln | His | Arg | Asp | Ser | Gly | Ser |
| | | | 110 | | | | | 115 | | | | | | 120 |

| | | |
|---|-----|-----|
| Ser Gly Lys Ser Arg Arg Lys Arg Gln Ile Tyr Gly Tyr Asp Ser | | |
| | 125 | 135 |
| Arg Phe Ser Ile Phe Gly Lys Asp Phe Leu Leu Asn Tyr Pro Phe | | |
| | 140 | 150 |
| Ser Thr Ser Val Lys Leu Ser Thr Gly Cys Thr Gly Thr Leu Val | | |
| | 155 | 165 |
| Ala Glu Lys His Val Leu Thr Ala Ala His Cys Ile His Asp Gly | | |
| | 170 | 180 |
| Lys Thr Tyr Val Lys Gly Thr Gln Lys Leu Arg Val Gly Phe Leu | | |
| | 185 | 195 |
| Lys Pro Lys Phe Lys Asp Gly Gly Arg Gly Ala Asn Asp Ser Thr | | |
| | 200 | 210 |
| Ser Ala Met Pro Glu Gln Met Lys Phe Gln Trp Ile Arg Val Lys | | |
| | 215 | 225 |
| Arg Thr His Val Pro Lys Gly Trp Ile Lys Gly Asn Ala Asn Asp | | |
| | 230 | 240 |
| Ile Gly Met Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Lys Pro | | |
| | 245 | 255 |
| His Lys Arg Lys Phe Met Lys Ile Gly Val Ser Pro Pro Ala Lys | | |
| | 260 | 270 |
| Gln Leu Pro Gly Gly Arg Ile His Phe Ser Gly Tyr Asp Asn Asp | | |
| | 275 | 285 |
| Arg Pro Gly Asn Leu Val Tyr Arg Phe Cys Asp Val Lys Asp Glu | | |
| | 290 | 300 |
| Thr Tyr Asp Leu Leu Tyr Gln Gln Cys Asp Ala Gln Pro Gly Ala | | |
| | 305 | 315 |
| Ser Gly Ser Gly Val Tyr Val Arg Met Trp Lys Arg Gln Gln Gln | | |
| | 320 | 330 |
| Lys Trp Glu Arg Lys Ile Ile Gly Ile Phe Ser Gly His Gln Trp | | |
| | 335 | 345 |
| Val Asp Met Asn Gly Ser Pro Gln Asp Phe Asn Val Ala Val Arg | | |
| | 350 | 360 |
| Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Tyr Trp Ile Lys Gly | | |
| | 365 | 375 |
| Asn Tyr Leu Asp Cys Arg Glu Gly | | |
| | 380 | |

<210> 262
 <211> 1378
 <212> DNA
 <213> Homo Sapien

<400> 262
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 ggagcgggat gcttgtctgg gcgactccgg gggccccctc atgtgccagg 800
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 aataggctca tctacctta cctctggggg cccggacggc tgctgcggaa 1150

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<210> 263

<211> 317

<212> PRT

<213> Homo Sapien

<400> 263

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Val | Val | Ser | Gly | Ala | Pro | Pro | Ala | Leu | Gly | Gly | Gly | Cys | Leu | 1 | 5 | 10 | 15 |
| Gly | Thr | Phe | Thr | Ser | Leu | Leu | Leu | Leu | Ala | Ser | Thr | Ala | Ile | Leu | 20 | 25 | 30 | |
| Asn | Ala | Ala | Arg | Ile | Pro | Val | Pro | Pro | Ala | Cys | Gly | Lys | Pro | Gln | 35 | 40 | 45 | |
| Gln | Leu | Asn | Arg | Val | Val | Gly | Gly | Glu | Asp | Ser | Thr | Asp | Ser | Glu | 50 | 55 | 60 | |
| Trp | Pro | Trp | Ile | Val | Ser | Ile | Gln | Lys | Asn | Gly | Thr | His | His | Cys | 65 | 70 | 75 | |
| Ala | Gly | Ser | Leu | Leu | Thr | Ser | Arg | Trp | Val | Ile | Thr | Ala | Ala | His | 80 | 85 | 90 | |
| Cys | Phe | Lys | Asp | Asn | Leu | Asn | Lys | Pro | Tyr | Leu | Phe | Ser | Val | Leu | 95 | 100 | 105 | |
| Leu | Gly | Ala | Trp | Gln | Leu | Gly | Asn | Pro | Gly | Ser | Arg | Ser | Gln | Lys | 110 | 115 | 120 | |
| Val | Gly | Val | Ala | Trp | Val | Glu | Pro | His | Pro | Val | Tyr | Ser | Trp | Lys | 125 | 130 | 135 | |
| Glu | Gly | Ala | Cys | Ala | Asp | Ile | Ala | Leu | Val | Arg | Leu | Glu | Arg | Ser | 140 | 145 | 150 | |
| Ile | Gln | Phe | Ser | Glu | Arg | Val | Leu | Pro | Ile | Cys | Leu | Pro | Asp | Ala | 155 | 160 | 165 | |
| Ser | Ile | His | Leu | Pro | Pro | Asn | Thr | His | Cys | Trp | Ile | Ser | Gly | Trp | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Ile | Gln | Asp | Gly | Val | Pro | Leu | Pro | His | Pro | Gln | Thr | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Lys | Leu | Lys | Val | Pro | Ile | Ile | Asp | Ser | Glu | Val | Cys | Ser | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Tyr | Trp | Arg | Gly | Ala | Gly | Gln | Gly | Pro | Ile | Thr | Glu | Asp | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Cys | Ala | Gly | Tyr | Leu | Glu | Gly | Glu | Arg | Asp | Ala | Cys | Leu | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Ser | Gly | Gly | Pro | Leu | Met | Cys | Gln | Val | Asp | Gly | Ala | Trp | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Ala | Gly | Ile | Ile | Ser | Trp | Gly | Glu | Gly | Cys | Ala | Glu | Arg | Asn |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Arg | Pro | Gly | Val | Tyr | Ile | Ser | Leu | Ser | Ala | His | Arg | Ser | Trp | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Glu | Lys | Ile | Val | Gln | Gly | Val | Gln | Leu | Arg | Gly | Arg | Ala | Gln | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gly | Gly | Ala | Leu | Arg | Ala | Pro | Ser | Gln | Gly | Ser | Gly | Ala | Ala | Ala |
| | | | | 305 | | | | | 310 | | | | | 315 |

Arg Ser

<210> 264

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 264

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<210> 265

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 265

gcagaggtgt ctaagggtg 19

<210> 266

<211> 24

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 266
 agctctagac caatgccagc ttcc 24

<210> 267
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Oligonucleotide Probe

<400> 267
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<210> 268
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<220>
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<400> 268
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<210> 269
 <211> 24
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<220>
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<400> 269
 gaatgcctg caagcatcaa ctgg 24

<210> 270
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<220>
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<400> 270
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<210> 271
<211> 26
<212> DNA
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<220>
<223> Synthetic Oligonucleotide Probe

<400> 271
gcggaagggc agaatgggac tccaag 26

<210> 272
<211> 18
<212> DNA
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<220>
<223> Synthetic Oligonucleotide Probe

<400> 272
cagccctgcc acatgtgc 18

<210> 273
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 273
tactgggtgg tcagcaac 18

<210> 274
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 274
ggcgaagagc aggtgagac cccg 24

<210> 275
<211> 45

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 275
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<210> 276

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 276

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<210> 277

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 277

ggctatgaca gcagggtc 18

<210> 278

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 278

tgacaatgac cgaccagg 18

<210> 279

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 279

gcacgcatt gctggtagag caag 24

<210> 280

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 280

ttacagtgcc ccctggaaac ccacttggcc tgcataccgc ctccc 45

<210> 281

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 281

cgtctcgagc gctccatata gttcccttgc ccca 34

<210> 282

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 282

tggaggggga gcgggatgct tgtctgggcg actccggggg cccctcatg 50

tgccaggtgg a 61

<210> 283

<211> 119

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 283

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gcagccatct gtactggcgg ggagcaggac agggacccat cactgaggac 100

atgctgtgtg ccggctact 119

<210> 284

<211> 1875

<212> DNA

<213> Homo Sapien

<400> 284

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ccgctactgc tactgtggt ggccaccaca ggccccgtg gagccctcac 100

agatgaggag aaacgtttga tgggtggagct gcacaacctc taccggggccc 150
 aggtatcccc gacggcctca gacatgctgc acatgagatg ggacgaggag 200
 ctggccgcct tcgccaaggc ctacgcacgg cagtgcgtgt gggggccacaa 250
 caaggagcgc gggcgccgcg gcgagaatct gttcgccatc acagacgagg 300
 gcatggacgt gccgctggcc atggaggagt ggcaccacga gcgtgagcac 350
 tacaacctca gcgcccacc ctgcagccca ggccagatgt gcggccacta 400
 cacgcagggtg gtatgggcca agacagagag gatcggtgt ggttcccact 450
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 gtaactgagg ccccatcctt ccgggcgact gaagcatcag actctaggaa 700
 aatgggtact ctttcttccc tagcaacggg gattccggct ttcttggtaa 750
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 ggctccacct tgcgtaacaa ctgaggtccc ttccattttg gcagctcaca 900
 gcctgcctc cttggatgag gagccagtta cttccccaa atcgacccat 950
 gttcctatcc caaatcagc agacaaagt acagacaaaa caaaagtgcc 1000
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 ataaaaacct gtccaacctg tgaaa 1875

<210> 285

<211> 463

<212> PRT

<213> Homo Sapien

<400> 285

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Gly | Ser | Cys | Ser | Phe | Leu | Met | Leu | Leu | Leu | Pro | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Val | Ala | Thr | Thr | Gly | Pro | Val | Gly | Ala | Leu | Thr | Asp |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Arg | Leu | Met | Val | Glu | Leu | His | Asn | Leu | Tyr | Arg | Ala |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Ser | Pro | Thr | Ala | Ser | Asp | Met | Leu | His | Met | Arg | Trp | Asp |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Leu | Ala | Ala | Phe | Ala | Lys | Ala | Tyr | Ala | Arg | Gln | Cys | Val |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | His | Asn | Lys | Glu | Arg | Gly | Arg | Arg | Gly | Glu | Asn | Leu | Phe |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Thr | Asp | Glu | Gly | Met | Asp | Val | Pro | Leu | Ala | Met | Glu | Glu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | His | His | Glu | Arg | Glu | His | Tyr | Asn | Leu | Ser | Ala | Ala | Thr | Cys |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gly | Gln | Met | Cys | Gly | His | Tyr | Thr | Gln | Val | Val | Trp | Ala |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | |
|-----------------|---------------------|-------------------------|
| Lys Thr Glu Arg | Ile Gly Cys Gly Ser | His Phe Cys Glu Lys Leu |
| | 140 | 145 150 |
| Gln Gly Val Glu | Glu Thr Asn Ile Glu | Leu Leu Val Cys Asn Tyr |
| | 155 | 160 165 |
| Glu Pro Pro Gly | Asn Val Lys Gly Lys | Arg Pro Tyr Gln Glu Gly |
| | 170 | 175 180 |
| Thr Pro Cys Ser | Gln Cys Pro Ser Gly | Tyr His Cys Lys Asn Ser |
| | 185 | 190 195 |
| Leu Cys Glu Pro | Ile Gly Ser Pro Glu | Asp Ala Gln Asp Leu Pro |
| | 200 | 205 210 |
| Tyr Leu Val Thr | Glu Ala Pro Ser Phe | Arg Ala Thr Glu Ala Ser |
| | 215 | 220 225 |
| Asp Ser Arg Lys | Met Gly Thr Pro Ser | Ser Leu Ala Thr Gly Ile |
| | 230 | 235 240 |
| Pro Ala Phe Leu | Val Thr Glu Val Ser | Gly Ser Leu Ala Thr Lys |
| | 245 | 250 255 |
| Ala Leu Pro Ala | Val Glu Thr Gln Ala | Pro Thr Ser Leu Ala Thr |
| | 260 | 265 270 |
| Lys Asp Pro Pro | Ser Met Ala Thr Glu | Ala Pro Pro Cys Val Thr |
| | 275 | 280 285 |
| Thr Glu Val Pro | Ser Ile Leu Ala Ala | His Ser Leu Pro Ser Leu |
| | 290 | 295 300 |
| Asp Glu Glu Pro | Val Thr Phe Pro Lys | Ser Thr His Val Pro Ile |
| | 305 | 310 315 |
| Pro Lys Ser Ala | Asp Lys Val Thr Asp | Lys Thr Lys Val Pro Ser |
| | 320 | 325 330 |
| Arg Ser Pro Glu | Asn Ser Leu Asp Pro | Lys Met Ser Leu Thr Gly |
| | 335 | 340 345 |
| Ala Arg Glu Leu | Leu Pro His Ala Gln | Glu Glu Ala Glu Ala Glu |
| | 350 | 355 360 |
| Ala Glu Leu Pro | Pro Ser Ser Glu Val | Leu Ala Ser Val Phe Pro |
| | 365 | 370 375 |
| Ala Gln Asp Lys | Pro Gly Glu Leu Gln | Ala Thr Leu Asp His Thr |
| | 380 | 385 390 |
| Gly His Thr Ser | Ser Lys Ser Leu Pro | Asn Phe Pro Asn Thr Ser |
| | 395 | 400 405 |

Ala Thr Ala Asn Ala Thr Gly Gly Arg Ala Leu Ala Leu Gln Ser
410 415 420

Ser Leu Pro Gly Ala Glu Gly Pro Asp Lys Pro Ser Val Val Ser
425 430 435

Gly Leu Asn Ser Gly Pro Gly His Val Trp Gly Pro Leu Leu Gly
440 445 450

Leu Leu Leu Leu Pro Pro Leu Val Leu Ala Gly Ile Phe
455 460

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<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 286

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<210> 287

<211> 24

<212> DNA

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<220>

<223> Synthetic Oligonucleotide Probe

<400> 287

ctcatattgc acaccagtaa ttcg 24

<210> 288

<211> 45

<212> DNA

<213> Artificial Sequence

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<223> Synthetic Oligonucleotide Probe

<400> 288

atgaggagaa acgtttgatg gtggagctgc acaacctcta ccggg 45

<210> 289

<211> 3662

<212> DNA

<213> Homo Sapien

<400> 289

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 caaggcaagt tccatgagcc accttcaaag ccttcgagaa gtgaaactga 200
 acaacaatga attggagacc attccaaatc tgggaccagt ctgggcaaatt 250
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 acatctgaaa gagtttcagt cccttgaaac tttggacctt agcagcaaca 350
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<212> PRT

<213> Homo Sapien

<400> 290

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| Met | Val | Asp | Val | Leu | Leu | Leu | Phe | Ser | Leu | Cys | Leu | Leu | Phe | His |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Arg | Pro | Asp | Leu | Ser | His | Asn | Arg | Leu | Ser | Phe | Ile | Lys |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Ser | Met | Ser | His | Leu | Gln | Ser | Leu | Arg | Glu | Val | Lys | Leu | 35 | 40 | 45 |
| Asn | Asn | Asn | Glu | Leu | Glu | Thr | Ile | Pro | Asn | Leu | Gly | Pro | Val | Ser | 50 | 55 | 60 |
| Ala | Asn | Ile | Thr | Leu | Leu | Ser | Leu | Ala | Gly | Asn | Arg | Ile | Val | Glu | 65 | 70 | 75 |
| Ile | Leu | Pro | Glu | His | Leu | Lys | Glu | Phe | Gln | Ser | Leu | Glu | Thr | Leu | 80 | 85 | 90 |
| Asp | Leu | Ser | Ser | Asn | Asn | Ile | Ser | Glu | Leu | Gln | Thr | Ala | Phe | Pro | 95 | 100 | 105 |
| Ala | Leu | Gln | Leu | Lys | Tyr | Leu | Tyr | Leu | Asn | Ser | Asn | Arg | Val | Thr | 110 | 115 | 120 |
| Ser | Met | Glu | Pro | Gly | Tyr | Phe | Asp | Asn | Leu | Ala | Asn | Thr | Leu | Leu | 125 | 130 | 135 |
| Val | Leu | Lys | Leu | Asn | Arg | Asn | Arg | Ile | Ser | Ala | Ile | Pro | Pro | Lys | 140 | 145 | 150 |
| Met | Phe | Lys | Leu | Pro | Gln | Leu | Gln | His | Leu | Glu | Leu | Asn | Arg | Asn | 155 | 160 | 165 |
| Lys | Ile | Lys | Asn | Val | Asp | Gly | Leu | Thr | Phe | Gln | Gly | Leu | Gly | Ala | 170 | 175 | 180 |
| Leu | Lys | Ser | Leu | Lys | Met | Gln | Arg | Asn | Gly | Val | Thr | Lys | Leu | Met | 185 | 190 | 195 |
| Asp | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Asn | Met | Glu | Ile | Leu | Gln | Leu | 200 | 205 | 210 |
| Asp | His | Asn | Asn | Leu | Thr | Glu | Ile | Thr | Lys | Gly | Trp | Leu | Tyr | Gly | 215 | 220 | 225 |
| Leu | Leu | Met | Leu | Gln | Glu | Leu | His | Leu | Ser | Gln | Asn | Ala | Ile | Asn | 230 | 235 | 240 |
| Arg | Ile | Ser | Pro | Asp | Ala | Trp | Glu | Phe | Cys | Gln | Lys | Leu | Ser | Glu | 245 | 250 | 255 |
| Leu | Asp | Leu | Thr | Phe | Asn | His | Leu | Ser | Arg | Leu | Asp | Asp | Ser | Ser | 260 | 265 | 270 |
| Phe | Leu | Gly | Leu | Ser | Leu | Leu | Asn | Thr | Leu | His | Ile | Gly | Asn | Asn | 275 | 280 | 285 |
| Arg | Val | Ser | Tyr | Ile | Ala | Asp | Cys | Ala | Phe | Arg | Gly | Leu | Ser | Ser | | | |

| 290 | | | | | | | | | | 295 | | | | | 300 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Lys | Thr | Leu | Asp | Leu | Lys | Asn | Asn | Glu | Ile | Ser | Trp | Thr | Ile | | | | | |
| | | | | 305 | | | | | | 310 | | | | 315 | | | | | |
| Glu | Asp | Met | Asn | Gly | Ala | Phe | Ser | Gly | Leu | Asp | Lys | Leu | Arg | Arg | | | | | |
| | | | | 320 | | | | | | 325 | | | | 330 | | | | | |
| Leu | Ile | Leu | Gln | Gly | Asn | Arg | Ile | Arg | Ser | Ile | Thr | Lys | Lys | Ala | | | | | |
| | | | | 335 | | | | | | 340 | | | | 345 | | | | | |
| Phe | Thr | Gly | Leu | Asp | Ala | Leu | Glu | His | Leu | Asp | Leu | Ser | Asp | Asn | | | | | |
| | | | | 350 | | | | | | 355 | | | | 360 | | | | | |
| Ala | Ile | Met | Ser | Leu | Gln | Gly | Asn | Ala | Phe | Ser | Gln | Met | Lys | Lys | | | | | |
| | | | | 365 | | | | | | 370 | | | | 375 | | | | | |
| Leu | Gln | Gln | Leu | His | Leu | Asn | Thr | Ser | Ser | Leu | Leu | Cys | Asp | Cys | | | | | |
| | | | | 380 | | | | | | 385 | | | | 390 | | | | | |
| Gln | Leu | Lys | Trp | Leu | Pro | Gln | Trp | Val | Ala | Glu | Asn | Asn | Phe | Gln | | | | | |
| | | | | 395 | | | | | | 400 | | | | 405 | | | | | |
| Ser | Phe | Val | Asn | Ala | Ser | Cys | Ala | His | Pro | Gln | Leu | Leu | Lys | Gly | | | | | |
| | | | | 410 | | | | | | 415 | | | | 420 | | | | | |
| Arg | Ser | Ile | Phe | Ala | Val | Ser | Pro | Asp | Gly | Phe | Val | Cys | Asp | Asp | | | | | |
| | | | | 425 | | | | | | 430 | | | | 435 | | | | | |
| Phe | Pro | Lys | Pro | Gln | Ile | Thr | Val | Gln | Pro | Glu | Thr | Gln | Ser | Ala | | | | | |
| | | | | 440 | | | | | | 445 | | | | 450 | | | | | |
| Ile | Lys | Gly | Ser | Asn | Leu | Ser | Phe | Ile | Cys | Ser | Ala | Ala | Ser | Ser | | | | | |
| | | | | 455 | | | | | | 460 | | | | 465 | | | | | |
| Ser | Asp | Ser | Pro | Met | Thr | Phe | Ala | Trp | Lys | Lys | Asp | Asn | Glu | Leu | | | | | |
| | | | | 470 | | | | | | 475 | | | | 480 | | | | | |
| Leu | His | Asp | Ala | Glu | Met | Glu | Asn | Tyr | Ala | His | Leu | Arg | Ala | Gln | | | | | |
| | | | | 485 | | | | | | 490 | | | | 495 | | | | | |
| Gly | Gly | Glu | Val | Met | Glu | Tyr | Thr | Thr | Ile | Leu | Arg | Leu | Arg | Glu | | | | | |
| | | | | 500 | | | | | | 505 | | | | 510 | | | | | |
| Val | Glu | Phe | Ala | Ser | Glu | Gly | Lys | Tyr | Gln | Cys | Val | Ile | Ser | Asn | | | | | |
| | | | | 515 | | | | | | 520 | | | | 525 | | | | | |
| His | Phe | Gly | Ser | Ser | Tyr | Ser | Val | Lys | Ala | Lys | Leu | Thr | Val | Asn | | | | | |
| | | | | 530 | | | | | | 535 | | | | 540 | | | | | |
| Met | Leu | Pro | Ser | Phe | Thr | Lys | Thr | Pro | Met | Asp | Leu | Thr | Ile | Arg | | | | | |
| | | | | 545 | | | | | | 550 | | | | 555 | | | | | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Gly Ala Met | Ala Arg Leu Glu Cys | Ala Ala Val Gly His | Pro |
| 560 | 565 | | 570 |
| Ala Pro Gln Ile | Ala Trp Gln Lys Asp | Gly Gly Thr Asp Phe | Pro |
| 575 | 580 | | 585 |
| Ala Ala Arg Glu | Arg Arg Met His Val | Met Pro Glu Asp Asp | Val |
| 590 | 595 | | 600 |
| Phe Phe Ile Val | Asp Val Lys Ile Glu | Asp Ile Gly Val Tyr | Ser |
| 605 | 610 | | 615 |
| Cys Thr Ala Gln | Asn Ser Ala Gly Ser | Ile Ser Ala Asn Ala | Thr |
| 620 | 625 | | 630 |
| Leu Thr Val Leu | Glu Thr Pro Ser Phe | Leu Arg Pro Leu Leu | Asp |
| 635 | 640 | | 645 |
| Arg Thr Val Thr | Lys Gly Glu Thr Ala | Val Leu Gln Cys Ile | Ala |
| 650 | 655 | | 660 |
| Gly Gly Ser Pro | Pro Pro Lys Leu Asn | Trp Thr Lys Asp Asp | Ser |
| 665 | 670 | | 675 |
| Pro Leu Val Val | Thr Glu Arg His Phe | Phe Ala Ala Gly Asn | Gln |
| 680 | 685 | | 690 |
| Leu Leu Ile Ile | Val Asp Ser Asp Val | Ser Asp Ala Gly Lys | Tyr |
| 695 | 700 | | 705 |
| Thr Cys Glu Met | Ser Asn Thr Leu Gly | Thr Glu Arg Gly Asn | Val |
| 710 | 715 | | 720 |
| Arg Leu Ser Val | Ile Pro Thr Pro Thr | Cys Asp Ser Pro Gln | Met |
| 725 | 730 | | 735 |
| Thr Ala Pro Ser | Leu Asp Asp Asp Gly | Trp Ala Thr Val Gly | Val |
| 740 | 745 | | 750 |
| Val Ile Ile Ala | Val Val Cys Cys Val | Val Gly Thr Ser Leu | Val |
| 755 | 760 | | 765 |
| Trp Val Val Ile | Ile Tyr His Thr Arg | Arg Arg Asn Glu Asp | Cys |
| 770 | 775 | | 780 |
| Ser Ile Thr Asn | Thr Asp Glu Thr Asn | Leu Pro Ala Asp Ile | Pro |
| 785 | 790 | | 795 |
| Ser Tyr Leu Ser | Ser Gln Gly Thr Leu | Ala Asp Arg Gln Asp | Gly |
| 800 | 805 | | 810 |

| | | | |
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| Tyr Val Ser Ser Glu Ser Gly Ser His His Gln Phe Val Thr Ser | 815 | 820 | 825 |
| Ser Gly Ala Gly Phe Phe Leu Pro Gln His Asp Ser Ser Gly Thr | 830 | 835 | 840 |
| Cys His Ile Asp Asn Ser Ser Glu Ala Asp Val Glu Ala Ala Thr | 845 | 850 | 855 |
| Asp Leu Phe Leu Cys Pro Phe Leu Gly Ser Thr Gly Pro Met Tyr | 860 | 865 | 870 |
| Leu Lys Gly Asn Val Tyr Gly Ser Asp Pro Phe Glu Thr Tyr His | 875 | 880 | 885 |
| Thr Gly Cys Ser Pro Asp Pro Arg Thr Val Leu Met Asp His Tyr | 890 | 895 | 900 |
| Glu Pro Ser Tyr Ile Lys Lys Lys Glu Cys Tyr Pro Cys Ser His | 905 | 910 | 915 |
| Pro Ser Glu Glu Ser Cys Glu Arg Ser Phe Ser Asn Ile Ser Trp | 920 | 925 | 930 |
| Pro Ser His Val Arg Lys Leu Leu Asn Thr Ser Tyr Ser His Asn | 935 | 940 | 945 |
| Glu Gly Pro Gly Met Lys Asn Leu Cys Leu Asn Lys Ser Ser Leu | 950 | 955 | 960 |
| Asp Phe Ser Ala Asn Pro Glu Pro Ala Ser Val Ala Ser Ser Asn | 965 | 970 | 975 |
| Ser Phe Met Gly Thr Phe Gly Lys Ala Leu Arg Arg Pro His Leu | 980 | 985 | 990 |
| Asp Ala Tyr Ser Ser Phe Gly Gln Pro Ser Asp Cys Gln Pro Arg | 995 | 1000 | 1005 |
| Ala Phe Tyr Leu Lys Ala His Ser Ser Pro Asp Leu Asp Ser Gly | 1010 | 1015 | 1020 |
| Ser Glu Glu Asp Gly Lys Glu Arg Thr Asp Phe Gln Glu Glu Asn | 1025 | 1030 | 1035 |
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| cctgacatct | gtatcttggg | ttactccaaa | tggaacagtc | atgacacatg | 2000 |
| gggcgtacaa | agtgcggata | gctgtgctca | gtgatggtac | gttaaatttc | 2050 |
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<212> PRT

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<400> 292

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| Met | Leu | Asn | Lys | Met | Thr | Leu | His | Pro | Gln | Gln | Ile | Met | Ile | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Arg | Phe | Asn | Arg | Ala | Leu | Phe | Asp | Pro | Leu | Leu | Val | Val | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ala | Leu | Gln | Leu | Leu | Val | Val | Ala | Gly | Leu | Val | Arg | Ala | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Cys | Val | Arg | Lys | Asn | Leu | Arg | Glu | Val | Pro | Asp | Gly | Ile | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Asn | Thr | Arg | Leu | Leu | Asn | Leu | His | Glu | Asn | Gln | Ile | Gln | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Lys | Val | Asn | Ser | Phe | Lys | His | Leu | Arg | His | Leu | Glu | Ile | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Leu | Ser | Arg | Asn | His | Ile | Arg | Thr | Ile | Glu | Ile | Gly | Ala | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Gly | Leu | Ala | Asn | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Thr | Thr | Ile | Pro | Asn | Gly | Ala | Phe | Val | Tyr | Leu | Ser | Lys | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser |

| 155 | 160 | 165 |
|-------------------------------------|-------------------------|-----|
| Tyr Ala Phe Asn Arg Ile Pro Ser Leu | Arg Arg Leu Asp Leu Gly | |
| 170 | 175 | 180 |
| Glu Leu Lys Arg Leu Ser Tyr Ile Ser | Glu Gly Ala Phe Glu Gly | |
| 185 | 190 | 195 |
| Leu Ser Asn Leu Arg Tyr Leu Asn Leu | Ala Met Cys Asn Leu Arg | |
| 200 | 205 | 210 |
| Glu Ile Pro Asn Leu Thr Pro Leu Ile | Lys Leu Asp Glu Leu Asp | |
| 215 | 220 | 225 |
| Leu Ser Gly Asn His Leu Ser Ala Ile | Arg Pro Gly Ser Phe Gln | |
| 230 | 235 | 240 |
| Gly Leu Met His Leu Gln Lys Leu Trp | Met Ile Gln Ser Gln Ile | |
| 245 | 250 | 255 |
| Gln Val Ile Glu Arg Asn Ala Phe Asp | Asn Leu Gln Ser Leu Val | |
| 260 | 265 | 270 |
| Glu Ile Asn Leu Ala His Asn Asn Leu | Thr Leu Leu Pro His Asp | |
| 275 | 280 | 285 |
| Leu Phe Thr Pro Leu His His Leu Glu | Arg Ile His Leu His His | |
| 290 | 295 | 300 |
| Asn Pro Trp Asn Cys Asn Cys Asp Ile | Leu Trp Leu Ser Trp Trp | |
| 305 | 310 | 315 |
| Ile Lys Asp Met Ala Pro Ser Asn Thr | Ala Cys Cys Ala Arg Cys | |
| 320 | 325 | 330 |
| Asn Thr Pro Pro Asn Leu Lys Gly Arg | Tyr Ile Gly Glu Leu Asp | |
| 335 | 340 | 345 |
| Gln Asn Tyr Phe Thr Cys Tyr Ala Pro | Val Ile Val Glu Pro Pro | |
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| Ala Asp Leu Asn Val Thr Glu Gly Met | Ala Ala Glu Leu Lys Cys | |
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| Arg Ala Ser Thr Ser Leu Thr Ser Val | Ser Trp Ile Thr Pro Asn | |
| 380 | 385 | 390 |
| Gly Thr Val Met Thr His Gly Ala Tyr | Lys Val Arg Ile Ala Val | |
| 395 | 400 | 405 |
| Leu Ser Asp Gly Thr Leu Asn Phe Thr | Asn Val Thr Val Gln Asp | |
| 410 | 415 | 420 |

Thr Gly Met Tyr Thr Cys Met Val Ser Asn Ser Val Gly Asn Thr
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<211> 1119

<212> PRT

<213> Homo Sapien

<400> 294

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Gly Arg Gly Glu Leu Gly Gln Pro Ser Gly Val Ala Ala Glu Arg
35 40 45

Pro Cys Pro Thr Thr Cys Arg Cys Leu Gly Asp Leu Leu Asp Cys
50 55 60

Ser Arg Lys Arg Leu Ala Arg Leu Pro Glu Pro Leu Pro Ser Trp
65 70 75

Val Ala Arg Leu Asp Leu Ser His Asn Arg Leu Ser Phe Ile Lys
80 85 90

Ala Ser Ser Met Ser His Leu Gln Ser Leu Arg Glu Val Lys Leu
95 100 105

Asn Asn Asn Glu Leu Glu Thr Ile Pro Asn Leu Gly Pro Val Ser
110 115 120

Ala Asn Ile Thr Leu Leu Ser Leu Ala Gly Asn Arg Ile Val Glu
125 130 135

Ile Leu Pro Glu His Leu Lys Glu Phe Gln Ser Leu Glu Thr Leu
140 145 150

Asp Leu Ser Ser Asn Asn Ile Ser Glu Leu Gln Thr Ala Phe Pro
155 160 165

Ala Leu Gln Leu Lys Tyr Leu Tyr Leu Asn Ser Asn Arg Val Thr
170 175 180

Ser Met Glu Pro Gly Tyr Phe Asp Asn Leu Ala Asn Thr Leu Leu
185 190 195

Val Leu Lys Leu Asn Arg Asn Arg Ile Ser Ala Ile Pro Pro Lys
200 205 210

Met Phe Lys Leu Pro Gln Leu Gln His Leu Glu Leu Asn Arg Asn

| | | | | | |
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| Lys Ile Lys Asn Val Asp Gly Leu Thr | Phe Gln Gly Leu Gly Ala | | | | |
| 230 | 235 | | | | 240 |
| Leu Lys Ser Leu Lys Met Gln Arg Asn | Gly Val Thr Lys Leu Met | | | | |
| 245 | 250 | | | | 255 |
| Asp Gly Ala Phe Trp Gly Leu Ser Asn | Met Glu Ile Leu Gln Leu | | | | |
| 260 | 265 | | | | 270 |
| Asp His Asn Asn Leu Thr Glu Ile Thr | Lys Gly Trp Leu Tyr Gly | | | | |
| 275 | 280 | | | | 285 |
| Leu Leu Met Leu Gln Glu Leu His Leu | Ser Gln Asn Ala Ile Asn | | | | |
| 290 | 295 | | | | 300 |
| Arg Ile Ser Pro Asp Ala Trp Glu Phe | Cys Gln Lys Leu Ser Glu | | | | |
| 305 | 310 | | | | 315 |
| Leu Asp Leu Thr Phe Asn His Leu Ser | Arg Leu Asp Asp Ser Ser | | | | |
| 320 | 325 | | | | 330 |
| Phe Leu Gly Leu Ser Leu Leu Asn Thr | Leu His Ile Gly Asn Asn | | | | |
| 335 | 340 | | | | 345 |
| Arg Val Ser Tyr Ile Ala Asp Cys Ala | Phe Arg Gly Leu Ser Ser | | | | |
| 350 | 355 | | | | 360 |
| Leu Lys Thr Leu Asp Leu Lys Asn Asn | Glu Ile Ser Trp Thr Ile | | | | |
| 365 | 370 | | | | 375 |
| Glu Asp Met Asn Gly Ala Phe Ser Gly | Leu Asp Lys Leu Arg Arg | | | | |
| 380 | 385 | | | | 390 |
| Leu Ile Leu Gln Gly Asn Arg Ile Arg | Ser Ile Thr Lys Lys Ala | | | | |
| 395 | 400 | | | | 405 |
| Phe Thr Gly Leu Asp Ala Leu Glu His | Leu Asp Leu Ser Asp Asn | | | | |
| 410 | 415 | | | | 420 |
| Ala Ile Met Ser Leu Gln Gly Asn Ala | Phe Ser Gln Met Lys Lys | | | | |
| 425 | 430 | | | | 435 |
| Leu Gln Gln Leu His Leu Asn Thr Ser | Ser Leu Leu Cys Asp Cys | | | | |
| 440 | 445 | | | | 450 |
| Gln Leu Lys Trp Leu Pro Gln Trp Val | Ala Glu Asn Asn Phe Gln | | | | |
| 455 | 460 | | | | 465 |
| Ser Phe Val Asn Ala Ser Cys Ala His | Pro Gln Leu Leu Lys Gly | | | | |
| 470 | 475 | | | | 480 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Arg Ser Ile Phe | Ala Val Ser Pro Asp | Gly Phe Val Cys Asp Asp | 485 | 490 | 495 |
| Phe Pro Lys Pro | Gln Ile Thr Val Gln | Pro Glu Thr Gln Ser Ala | 500 | 505 | 510 |
| Ile Lys Gly Ser | Asn Leu Ser Phe Ile | Cys Ser Ala Ala Ser Ser | 515 | 520 | 525 |
| Ser Asp Ser Pro | Met Thr Phe Ala Trp | Lys Lys Asp Asn Glu Leu | 530 | 535 | 540 |
| Leu His Asp Ala | Glu Met Glu Asn Tyr | Ala His Leu Arg Ala Gln | 545 | 550 | 555 |
| Gly Gly Glu Val | Met Glu Tyr Thr Thr | Ile Leu Arg Leu Arg Glu | 560 | 565 | 570 |
| Val Glu Phe Ala | Ser Glu Gly Lys Tyr | Gln Cys Val Ile Ser Asn | 575 | 580 | 585 |
| His Phe Gly Ser | Ser Tyr Ser Val Lys | Ala Lys Leu Thr Val Asn | 590 | 595 | 600 |
| Met Leu Pro Ser | Phe Thr Lys Thr Pro | Met Asp Leu Thr Ile Arg | 605 | 610 | 615 |
| Ala Gly Ala Met | Ala Arg Leu Glu Cys | Ala Ala Val Gly His Pro | 620 | 625 | 630 |
| Ala Pro Gln Ile | Ala Trp Gln Lys Asp | Gly Gly Thr Asp Phe Pro | 635 | 640 | 645 |
| Ala Ala Arg Glu | Arg Arg Met His Val | Met Pro Glu Asp Asp Val | 650 | 655 | 660 |
| Phe Phe Ile Val | Asp Val Lys Ile Glu | Asp Ile Gly Val Tyr Ser | 665 | 670 | 675 |
| Cys Thr Ala Gln | Asn Ser Ala Gly Ser | Ile Ser Ala Asn Ala Thr | 680 | 685 | 690 |
| Leu Thr Val Leu | Glu Thr Pro Ser Phe | Leu Arg Pro Leu Leu Asp | 695 | 700 | 705 |
| Arg Thr Val Thr | Lys Gly Glu Thr Ala | Val Leu Gln Cys Ile Ala | 710 | 715 | 720 |
| Gly Gly Ser Pro | Pro Pro Lys Leu Asn | Trp Thr Lys Asp Asp Ser | 725 | 730 | 735 |
| Pro Leu Val Val | Thr Glu Arg His Phe | Phe Ala Ala Gly Asn Gln | 740 | 745 | 750 |

Leu Leu Ile Ile Val Asp Ser Asp Val Ser Asp Ala Gly Lys Tyr
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 770 775 780
 Arg Leu Ser Val Ile Pro Thr Pro Thr Cys Asp Ser Pro Gln Met
 785 790 795
 Thr Ala Pro Ser Leu Asp Asp Asp Gly Trp Ala Thr Val Gly Val
 800 805 810
 Val Ile Ile Ala Val Val Cys Cys Val Val Gly Thr Ser Leu Val
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 Trp Val Val Ile Ile Tyr His Thr Arg Arg Arg Asn Glu Asp Cys
 830 835 840
 Ser Ile Thr Asn Thr Asp Glu Thr Asn Leu Pro Ala Asp Ile Pro
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 Ser Tyr Leu Ser Ser Gln Gly Thr Leu Ala Asp Arg Gln Asp Gly
 860 865 870
 Tyr Val Ser Ser Glu Ser Gly Ser His His Gln Phe Val Thr Ser
 875 880 885
 Ser Gly Ala Gly Phe Phe Leu Pro Gln His Asp Ser Ser Gly Thr
 890 895 900
 Cys His Ile Asp Asn Ser Ser Glu Ala Asp Val Glu Ala Ala Thr
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 Asp Leu Phe Leu Cys Pro Phe Leu Gly Ser Thr Gly Pro Met Tyr
 920 925 930
 Leu Lys Gly Asn Val Tyr Gly Ser Asp Pro Phe Glu Thr Tyr His
 935 940 945
 Thr Gly Cys Ser Pro Asp Pro Arg Thr Val Leu Met Asp His Tyr
 950 955 960
 Glu Pro Ser Tyr Ile Lys Lys Lys Glu Cys Tyr Pro Cys Ser His
 965 970 975
 Pro Ser Glu Glu Ser Cys Glu Arg Ser Phe Ser Asn Ile Ser Trp
 980 985 990
 Pro Ser His Val Arg Lys Leu Leu Asn Thr Ser Tyr Ser His Asn
 995 1000 1005
 Glu Gly Pro Gly Met Lys Asn Leu Cys Leu Asn Lys Ser Ser Leu

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| 1010 | 1015 | 1020 |
| Asp Phe Ser Ala Asn Pro Glu Pro Ala Ser Val Ala Ser Ser Asn | | |
| 1025 | 1030 | 1035 |
| Ser Phe Met Gly Thr Phe Gly Lys Ala Leu Arg Arg Pro His Leu | | |
| 1040 | 1045 | 1050 |
| Asp Ala Tyr Ser Ser Phe Gly Gln Pro Ser Asp Cys Gln Pro Arg | | |
| 1055 | 1060 | 1065 |
| Ala Phe Tyr Leu Lys Ala His Ser Ser Pro Asp Leu Asp Ser Gly | | |
| 1070 | 1075 | 1080 |
| Ser Glu Glu Asp Gly Lys Glu Arg Thr Asp Phe Gln Glu Glu Asn | | |
| 1085 | 1090 | 1095 |
| His Ile Cys Thr Phe Lys Gln Thr Leu Glu Asn Tyr Arg Thr Pro | | |
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| Asn Phe Gln Ser Tyr Asp Leu Asp Thr | | |
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<223> Synthetic Oligonucleotide Probe

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| tcaagcgcaa | tgagctggct | gccttggcac | gaggggcgct | ggcgggcatg | 1850 |
| gctcagctgc | gtgagctgta | cctcaccagc | aaccgactgc | gcagccgagc | 1900 |
| cctggggccc | cgtgcctggg | tggacctcgc | ccatctgcag | ctgctggaca | 1950 |
| tcgccgggaa | tcagctcaca | gagatccccg | aggggctccc | cgagtcactt | 2000 |
| gagtacctgt | acctgcagaa | caacaagatt | agtgcggtgc | ccgccaatgc | 2050 |
| cttcgactcc | acgcccacc | tcaaggggat | ctttctcagg | tttaacaagc | 2100 |
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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 312

ggggccacgg tccttggaat tg 22

<210> 313

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 313

tggaggagct caacctcagc tacaaccgca tcaccagccc acagg 45

<210> 314

<211> 3003

<212> DNA

<213> Homo Sapien

<400> 314

gggagggggc tccgggcgcc ggcagcaga cctgctccgg ccgcgcgcct 50

cgccgctgtc ctccgggagc ggcagcagta gcccgggcgg cgagggctgg 100

gggttcctcg agactctcag aggggcgcct cccatcggcg cccaccaccc 150
 caacctgttc ctgcgcgcgc actgcgctgc gcccaggac ccgctgcca 200
 acatggattt tctcctggcg ctgggtgctgg tctcctcgt ctacctgcag 250
 gcggccgcgc agttcgacgg gaggtggccc aggcaaatag tgtcatcgat 300
 tggcctatgt cgttatggtg ggaggattga ctgctgctgg ggctgggctc 350
 gccagtcttg gggacagtgt cagcctgtgt gccaacacg atgcaaacaat 400
 ggtgaatgta tcggggccaaa caagtgcag tgctatcctg gttatgctgg 450
 aaaaacctgt aatcaagatc taaatgagtg tggcctgaag ccccgccct 500
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 taataattgg attcctgatg ttggaagtac ttggtagcct ccgaagacac 1100
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aat 3003

<210> 315

<211> 509

<212> PRT

<213> Homo Sapien

<400> 315

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Phe | Leu | Leu | Ala | Leu | Val | Leu | Val | Ser | Ser | Leu | Tyr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Ala | Ala | Ala | Glu | Phe | Asp | Gly | Arg | Trp | Pro | Arg | Gln | Ile | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Ser | Ile | Gly | Leu | Cys | Arg | Tyr | Gly | Gly | Arg | Ile | Asp | Cys | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Trp | Gly | Trp | Ala | Arg | Gln | Ser | Trp | Gly | Gln | Cys | Gln | Pro | Val | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Pro | Arg | Cys | Lys | His | Gly | Glu | Cys | Ile | Gly | Pro | Asn | Lys | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Cys | His | Pro | Gly | Tyr | Ala | Gly | Lys | Thr | Cys | Asn | Gln | Asp | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Glu | Cys | Gly | Leu | Lys | Pro | Arg | Pro | Cys | Lys | His | Arg | Cys | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Thr | Tyr | Gly | Ser | Tyr | Lys | Cys | Tyr | Cys | Leu | Asn | Gly | Tyr | Met |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Pro | Asp | Gly | Ser | Cys | Ser | Ser | Ala | Leu | Thr | Cys | Ser | Met |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Asn | Cys | Gln | Tyr | Gly | Cys | Asp | Val | Val | Lys | Gly | Gln | Ile | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Cys | Gln | Cys | Pro | Ser | Pro | Gly | Leu | His | Leu | Ala | Pro | Asp | Gly | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | |
|-----------------|---------------------|-------------------------|
| Thr Cys Val Asp | Val Asp Glu Cys Ala | Thr Gly Arg Ala Ser Cys |
| 170 | 175 | 180 |
| Pro Arg Phe Arg | Gln Cys Val Asn Thr | Phe Gly Ser Tyr Ile Cys |
| 185 | 190 | 195 |
| Lys Cys His Lys | Gly Phe Asp Leu Met | Tyr Ile Gly Gly Lys Tyr |
| 200 | 205 | 210 |
| Gln Cys His Asp | Ile Asp Glu Cys Ser | Leu Gly Gln Tyr Gln Cys |
| 215 | 220 | 225 |
| Ser Ser Phe Ala | Arg Cys Tyr Asn Val | Arg Gly Ser Tyr Lys Cys |
| 230 | 235 | 240 |
| Lys Cys Lys Glu | Gly Tyr Gln Gly Asp | Gly Leu Thr Cys Val Tyr |
| 245 | 250 | 255 |
| Ile Pro Lys Val | Met Ile Glu Pro Ser | Gly Pro Ile His Val Pro |
| 260 | 265 | 270 |
| Lys Gly Asn Gly | Thr Ile Leu Lys Gly | Asp Thr Gly Asn Asn Asn |
| 275 | 280 | 285 |
| Trp Ile Pro Asp | Val Gly Ser Thr Trp | Trp Pro Pro Lys Thr Pro |
| 290 | 295 | 300 |
| Tyr Ile Pro Pro | Ile Ile Thr Asn Arg | Pro Thr Ser Lys Pro Thr |
| 305 | 310 | 315 |
| Thr Arg Pro Thr | Pro Lys Pro Thr Pro | Ile Pro Thr Pro Pro Pro |
| 320 | 325 | 330 |
| Pro Pro Pro Leu | Pro Thr Glu Leu Arg | Thr Pro Leu Pro Pro Thr |
| 335 | 340 | 345 |
| Thr Pro Glu Arg | Pro Thr Thr Gly Leu | Thr Thr Ile Ala Pro Ala |
| 350 | 355 | 360 |
| Ala Ser Thr Pro | Pro Gly Gly Ile Thr | Val Asp Asn Arg Val Gln |
| 365 | 370 | 375 |
| Thr Asp Pro Gln | Lys Pro Arg Gly Asp | Val Phe Ser Val Leu Val |
| 380 | 385 | 390 |
| His Ser Cys Asn | Phe Asp His Gly Leu | Cys Gly Trp Ile Arg Glu |
| 395 | 400 | 405 |
| Lys Asp Asn Asp | Leu His Trp Glu Pro | Ile Arg Asp Pro Ala Gly |
| 410 | 415 | 420 |
| Gly Gln Tyr Leu | Thr Val Ser Ala Ala | Lys Ala Pro Gly Gly Lys |

| | | |
|-------------------------------------|-------------------------|-----|
| 425 | 430 | 435 |
| Ala Ala Arg Leu Val Leu Pro Leu Gly | Arg Leu Met His Ser Gly | |
| 440 | 445 | 450 |
| Asp Leu Cys Leu Ser Phe Arg His Lys | Val Thr Gly Leu His Ser | |
| 455 | 460 | 465 |
| Gly Thr Leu Gln Val Phe Val Arg Lys | His Gly Ala His Gly Ala | |
| 470 | 475 | 480 |
| Ala Leu Trp Gly Arg Asn Gly Gly His | Gly Trp Arg Gln Thr Gln | |
| 485 | 490 | 495 |
| Ile Thr Leu Arg Gly Ala Asp Ile Lys | Ser Glu Ser Gln Arg | |
| 500 | 505 | |

<210> 316

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 316

gatggttcct gctcaagtgc cctg 24

<210> 317

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 317

ttgcacttgt aggacccacg tacg 24

<210> 318

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 318

ctgatgggag gacctgtgta gatgttgatg aatgtgctac aggaagagcc 50

<210> 319

<211> 2110

<212> DNA

<213> Homo Sapien

<400> 319

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 tttagattgt gaaatgtggc tcaaggtctt cacaactttc ctttcctttg 100
 caacaggtgc ttgctcgggg ctgaaggtga cagtgccatc acacactgtc 150
 catggcgctca gaggtcaggc cctctaccta cccgtccact atggcttcca 200
 cactccagca tcagacatcc agatcatatg gctatttgag agaccccaca 250
 caatgccccaa atacttactg ggctctgtga ataagtctgt ggttcctgac 300
 ttggaatacc aacacaagtt caccatgatg ccacccaatg catctctgct 350
 tatcaaccca ctgcagttcc ctgatgaagg caattacatc gtgaagggtca 400
 acattcaggg aaatggaact ctatctgccg gtcagaagat acaagtcacg 450
 gttgatgatc ctgtcacaaa gccagtggtg cagattcacc ctcctctctg 500
 ggctgtggag tatgtgggga acatgaccct gacatgccat gtggaagggg 550
 gcactcggct agcttaccaa tggctaaaaa atgggagacc tgccacacc 600
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 agtaaccaag gaagacattg ggaattacag ctgcctgggtg aggaaccctg 700
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 gaagacaatg gactatgtgt gctgtgctta caacaacata accggcaggc 1000
 aagatgaaac tcatttcaca gttatcatca cttccgtagg actggagaag 1050
 cttgcacaga aaggaaaatc attgtcacct ttagcaagta taactggaat 1100
 atcactattt ttgattatat ccatgtgtct tctcttccta tggaaaaaat 1150
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cttecggaata tatgaatttg ttgcttttcc agatgtttct ggtgtttcca 1300
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 aaaaaaaaaa 2110

<210> 320

<211> 450

<212> PRT

<213> Homo Sapien

<400> 320

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Leu | Lys | Val | Phe | Thr | Thr | Phe | Leu | Ser | Phe | Ala | Thr | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Cys | Ser | Gly | Leu | Lys | Val | Thr | Val | Pro | Ser | His | Thr | Val | His |
| | | | | 20 | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Val | Arg | Gly | Gln | Ala | Leu | Tyr | Leu | Pro | Val | His | Tyr | Gly | Phe |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Pro | Ala | Ser | Asp | Ile | Gln | Ile | Ile | Trp | Leu | Phe | Glu | Arg |
| | | | | 50 | | | | 55 | | | | | 60 | |

| | | | | | |
|-----------------|-------------------------|---------------------|-----|-----|-----|
| Pro His Thr Met | Pro Lys Tyr Leu Leu Gly | Ser Val Asn Lys Ser | 65 | 70 | 75 |
| Val Val Pro Asp | Leu Glu Tyr Gln His Lys | Phe Thr Met Met Pro | 80 | 85 | 90 |
| Pro Asn Ala Ser | Leu Leu Ile Asn Pro Leu | Gln Phe Pro Asp Glu | 95 | 100 | 105 |
| Gly Asn Tyr Ile | Val Lys Val Asn Ile Gln | Gly Asn Gly Thr Leu | 110 | 115 | 120 |
| Ser Ala Ser Gln | Lys Ile Gln Val Thr Val | Asp Asp Pro Val Thr | 125 | 130 | 135 |
| Lys Pro Val Val | Gln Ile His Pro Pro Ser | Gly Ala Val Glu Tyr | 140 | 145 | 150 |
| Val Gly Asn Met | Thr Leu Thr Cys His Val | Glu Gly Gly Thr Arg | 155 | 160 | 165 |
| Leu Ala Tyr Gln | Trp Leu Lys Asn Gly Arg | Pro Val His Thr Ser | 170 | 175 | 180 |
| Ser Thr Tyr Ser | Phe Ser Pro Gln Asn Asn | Thr Leu His Ile Ala | 185 | 190 | 195 |
| Pro Val Thr Lys | Glu Asp Ile Gly Asn Tyr | Ser Cys Leu Val Arg | 200 | 205 | 210 |
| Asn Pro Val Ser | Glu Met Glu Ser Asp Ile | Ile Met Pro Ile Ile | 215 | 220 | 225 |
| Tyr Tyr Gly Pro | Tyr Gly Leu Gln Val Asn | Ser Asp Lys Gly Leu | 230 | 235 | 240 |
| Lys Val Gly Glu | Val Phe Thr Val Asp Leu | Gly Glu Ala Ile Leu | 245 | 250 | 255 |
| Phe Asp Cys Ser | Ala Asp Ser His Pro Pro | Asn Thr Tyr Ser Trp | 260 | 265 | 270 |
| Ile Arg Arg Thr | Asp Asn Thr Thr Tyr Ile | Ile Lys His Gly Pro | 275 | 280 | 285 |
| Arg Leu Glu Val | Ala Ser Glu Lys Val Ala | Gln Lys Thr Met Asp | 290 | 295 | 300 |
| Tyr Val Cys Cys | Ala Tyr Asn Asn Ile Thr | Gly Arg Gln Asp Glu | 305 | 310 | 315 |
| Thr His Phe Thr | Val Ile Ile Thr Ser Val | Gly Leu Glu Lys Leu | | | |

| | 320 | 325 | 330 |
|-----------------|---------------------|---------------------|-----|
| Ala Gln Lys Gly | Lys Ser Leu Ser Pro | Leu Ala Ser Ile Thr | Gly |
| | 335 | 340 | 345 |
| Ile Ser Leu Phe | Leu Ile Ile Ser Met | Cys Leu Leu Phe Leu | Trp |
| | 350 | 355 | 360 |
| Lys Lys Tyr Gln | Pro Tyr Lys Val Ile | Lys Gln Lys Leu Glu | Gly |
| | 365 | 370 | 375 |
| Arg Pro Glu Thr | Glu Tyr Arg Lys Ala | Gln Thr Phe Ser Gly | His |
| | 380 | 385 | 390 |
| Glu Asp Ala Leu | Asp Asp Phe Gly Ile | Tyr Glu Phe Val Ala | Phe |
| | 395 | 400 | 405 |
| Pro Asp Val Ser | Gly Val Ser Arg Ile | Pro Ser Arg Ser Val | Pro |
| | 410 | 415 | 420 |
| Ala Ser Asp Cys | Val Ser Gly Gln Asp | Leu His Ser Thr Val | Tyr |
| | 425 | 430 | 435 |
| Glu Val Ile Gln | His Ile Pro Ala Gln | Gln Gln Asp His Pro | Glu |
| | 440 | 445 | 450 |

<210> 321

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 321

gacacctgtca caaagccagt ggtgc 25

<210> 322

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 322

cactgacagg gttcctcacc cagg 24

<210> 323

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 323

ctccctcttg gctgtggagt atgtggggaa catgaccctg acatg 45

<210> 324

<211> 2397

<212> DNA

<213> Homo Sapien

<400> 324

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cctgggtgctg ttgctttggg gtgctccctg gacgcacggg cggcggagca 100
acgttcgcgt catcacggac gagaactgga gagaactgct ggaaggagac 150
tggatgatag aattttatgc cccgtgggtgc cctgcttgct aaaatcttca 200
accggaatgg gaaagttttg ctgaatgggg agaagatctt gaggttaata 250
ttgcgaaagt agatgtcaca gagcagccag gactgagtgg acggtttata 300
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ctatcagggg ccaaggacta agaaggactt cataaacttt ataagtata 400
aagagtggaa gagtattgag cccgtttcat catggtttgg tccaggttct 450
gttctgatga gtagtatgtc agcactcttt cagctatcta tgtggatcag 500
gacgtgccat aactacttta ttgaagacct tggattgcca gtgtggggat 550
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ctctgtatga tatttgtggc agattgcctt tgtccttcaa aaaggcgcag 650
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aacctttgaa aaaagtggag gaggaacaag aggcggatga agaagatgtt 750
tcagaagaag aagctgaaag taaagaagga acaaacaag actttccaca 800
gaatgccata agacaacgct ctctgggtcc atcattggcc acagataaat 850
cctagttaaa ttttatagtt atcttaatat tatgattttg ataaaaacag 900
aagattgatc attttgtttg gtttgaagtg aactgtgact tttttgaata 950
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acataaaaagc actaggtata caagtttgaa atatgattta agcacagtat 1050
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 caggaaaaag catcttcttg tatatgtctt aaatgtattt ttgtcctcat 1900
 atacagaaag ttcttaattg attttacagt ctgtaatgct tgatgtttta 1950
 aaataataac atttttatat tttttaaaag acaaacttca tattatcctg 2000
 tgttctttcc tgactggtaa tattgtgtgg gatttcacag gtaaaagtca 2050
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 ctgaccatta cgtagtagac aatttctgta atgtccctt ctttctaggc 2200
 tctgttgctg tgtgaatcca ttagatttac agtatcgtaa tatacaagtt 2250
 ttcttttaaag ccttctcctt tagaatttaa aatattgtac cattaaagag 2300
 tttgatgtg taacttgtga tgccttagaa aaatatccta agcacaaaat 2350

aaacctttct aaccacttca ttaaagctga aaaaaaaaaa aaaaaaa 2397

<210> 325

<211> 280

<212> PRT

<213> Homo Sapien

<400> 325

Met Ala Pro Ser Gly Ser Leu Ala Val Pro Leu Ala Val Leu Val
1 5 10 15

Leu Leu Leu Trp Gly Ala Pro Trp Thr His Gly Arg Arg Ser Asn
20 25 30

Val Arg Val Ile Thr Asp Glu Asn Trp Arg Glu Leu Leu Glu Gly
35 40 45

Asp Trp Met Ile Glu Phe Tyr Ala Pro Trp Cys Pro Ala Cys Gln
50 55 60

Asn Leu Gln Pro Glu Trp Glu Ser Phe Ala Glu Trp Gly Glu Asp
65 70 75

Leu Glu Val Asn Ile Ala Lys Val Asp Val Thr Glu Gln Pro Gly
80 85 90

Leu Ser Gly Arg Phe Ile Ile Thr Ala Leu Pro Thr Ile Tyr His
95 100 105

Cys Lys Asp Gly Glu Phe Arg Arg Tyr Gln Gly Pro Arg Thr Lys
110 115 120

Lys Asp Phe Ile Asn Phe Ile Ser Asp Lys Glu Trp Lys Ser Ile
125 130 135

Glu Pro Val Ser Ser Trp Phe Gly Pro Gly Ser Val Leu Met Ser
140 145 150

Ser Met Ser Ala Leu Phe Gln Leu Ser Met Trp Ile Arg Thr Cys
155 160 165

His Asn Tyr Phe Ile Glu Asp Leu Gly Leu Pro Val Trp Gly Ser
170 175 180

Tyr Thr Val Phe Ala Leu Ala Thr Leu Phe Ser Gly Leu Leu Leu
185 190 195

Gly Leu Cys Met Ile Phe Val Ala Asp Cys Leu Cys Pro Ser Lys
200 205 210

Arg Arg Arg Pro Gln Pro Tyr Pro Tyr Pro Ser Lys Lys Leu Leu

| 215 | 220 | 225 |
|---|-------------------------|-----|
| Ser Glu Ser Ala Gln Pro Leu Lys Lys | Val Glu Glu Glu Gln Glu | |
| 230 | 235 | 240 |
| Ala Asp Glu Glu Asp Val Ser Glu Glu Glu | Ala Glu Ser Lys Glu | |
| 245 | 250 | 255 |
| Gly Thr Asn Lys Asp Phe Pro Gln Asn Ala | Ile Arg Gln Arg Ser | |
| 260 | 265 | 270 |
| Leu Gly Pro Ser Leu Ala Thr Asp Lys Ser | | |
| 275 | 280 | |

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<211> 23

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<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 326

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<210> 327

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 327

tatgtggatc aggacgtgcc 20

<210> 328

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 328

tgcagggttc agtctagatt g 21

<210> 329

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 329

ttgaaggaca aaggcaatct gccac 25

<210> 330

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 330

ggagtcttgc agttcccctg gcagtcctgg tgctgttget ttggg 45

<210> 331

<211> 2168

<212> DNA

<213> Homo Sapien

<400> 331

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aacgggaccc ttctgtgtgc cagaaaccgc aagcagttgc taaccagtg 100

ggacaggcgg attggaagag cgggaaggtc ctggcccaga gcagtgtgac 150

acttcctct gtgaccatga aactctgggt gtctgcattg ctgatggcct 200

ggtttggtgt cctgagctgt gtgcaggccg aattcttcac ctctattggg 250

cacatgactg acctgattta tgcagagaaa gagctggtgc agtctctgaa 300

agagtacatc cttgtggagg aagccaagct ttccaagatt aagagctggg 350

ccaacaaaat ggaagccttg actagcaagt cagctgctga tgctgagggc 400

tacctggctc accctgtgaa tgctacaaa ctggtgaagc ggctaaacac 450

agactggcct gcgctggagg acctgtcct gcaggactca gctgcaggtt 500

ttatcgccaa cctctctgtg cagcggcagt tcttccccac tgatgaggac 550

gagataggag ctgccaaagc cctgatgaga cttcaggaca catacaggct 600

ggaccaggc acaatttcca gagggaact tccaggaacc aagtaccagg 650

caatgctgag tgtggatgac tgctttggga tgggccgctc ggctacaat 700

gaaggggact attatcatc ggtgttgtgg atggagcagg tgctaaagca 750

gcttgatgcc ggggaggagg ccaccacaac caagtcacag gtgctggact 800
 acctcagcta tgetgtcttc cagttgggtg atctgcaccg tgccttggag 850
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 gaatctgcgg tactttgagc agttattgga ggaagagaga gaaaaaacgt 950
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 ctgcagaatt gttacagggt gcaaattatg gagtgggagg acagtatgaa 1450
 ccgcacttcg acttctctag gcgacctttt gacagcggcc tcaaaacaga 1500
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 accatactag ggcgactcct gtgtgactga agtcccagcc cttccattca 1950
 gcctgtgccca tccctggccc caaggctagg atcaaagtgg ctgcagcaga 2000
 gttagetgtc tagcgcttag caaggtgcct ttgtacctca ggtgttttag 2050
 gtgtgagatg tttcagtga ccaaagttct gataccttgt ttacatgttt 2100

gtttttatgg catttctatc tattgtggct ttaccaaaaa ataaaatgtc 2150

cctaccagaa aaaaaaaaa 2168

<210> 332

<211> 533

<212> PRT

<213> Homo Sapien

<400> 332

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Leu | Trp | Val | Ser | Ala | Leu | Leu | Met | Ala | Trp | Phe | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Cys | Val | Gln | Ala | Glu | Phe | Phe | Thr | Ser | Ile | Gly | His | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asp | Leu | Ile | Tyr | Ala | Glu | Lys | Glu | Leu | Val | Gln | Ser | Leu | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Tyr | Ile | Leu | Val | Glu | Glu | Ala | Lys | Leu | Ser | Lys | Ile | Lys | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ala | Asn | Lys | Met | Glu | Ala | Leu | Thr | Ser | Lys | Ser | Ala | Ala | Asp |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Glu | Gly | Tyr | Leu | Ala | His | Pro | Val | Asn | Ala | Tyr | Lys | Leu | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Arg | Leu | Asn | Thr | Asp | Trp | Pro | Ala | Leu | Glu | Asp | Leu | Val | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asp | Ser | Ala | Ala | Gly | Phe | Ile | Ala | Asn | Leu | Ser | Val | Gln | Arg |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Phe | Phe | Pro | Thr | Asp | Glu | Asp | Glu | Ile | Gly | Ala | Ala | Lys | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Met | Arg | Leu | Gln | Asp | Thr | Tyr | Arg | Leu | Asp | Pro | Gly | Thr | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Gly | Glu | Leu | Pro | Gly | Thr | Lys | Tyr | Gln | Ala | Met | Leu | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Asp | Cys | Phe | Gly | Met | Gly | Arg | Ser | Ala | Tyr | Asn | Glu | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Tyr | Tyr | His | Thr | Val | Leu | Trp | Met | Glu | Gln | Val | Leu | Lys | Gln |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Ala | Gly | Glu | Glu | Ala | Thr | Thr | Thr | Lys | Ser | Gln | Val | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | |
|---|-----|-----|-----|
| Asp Tyr Leu Ser Tyr Ala Val Phe Gln Leu Gly Asp Leu His Arg | 215 | 220 | 225 |
| Ala Leu Glu Leu Thr Arg Arg Leu Leu Ser Leu Asp Pro Ser His | 230 | 235 | 240 |
| Glu Arg Ala Gly Gly Asn Leu Arg Tyr Phe Glu Gln Leu Leu Glu | 245 | 250 | 255 |
| Glu Glu Arg Glu Lys Thr Leu Thr Asn Gln Thr Glu Ala Glu Leu | 260 | 265 | 270 |
| Ala Thr Pro Glu Gly Ile Tyr Glu Arg Pro Val Asp Tyr Leu Pro | 275 | 280 | 285 |
| Glu Arg Asp Val Tyr Glu Ser Leu Cys Arg Gly Glu Gly Val Lys | 290 | 295 | 300 |
| Leu Thr Pro Arg Arg Gln Lys Arg Leu Phe Cys Arg Tyr His His | 305 | 310 | 315 |
| Gly Asn Arg Ala Pro Gln Leu Leu Ile Ala Pro Phe Lys Glu Glu | 320 | 325 | 330 |
| Asp Glu Trp Asp Ser Pro His Ile Val Arg Tyr Tyr Asp Val Met | 335 | 340 | 345 |
| Ser Asp Glu Glu Ile Glu Arg Ile Lys Glu Ile Ala Lys Pro Lys | 350 | 355 | 360 |
| Leu Ala Arg Ala Thr Val Arg Asp Pro Lys Thr Gly Val Leu Thr | 365 | 370 | 375 |
| Val Ala Ser Tyr Arg Val Ser Lys Ser Ser Trp Leu Glu Glu Asp | 380 | 385 | 390 |
| Asp Asp Pro Val Val Ala Arg Val Asn Arg Arg Met Gln His Ile | 395 | 400 | 405 |
| Thr Gly Leu Thr Val Lys Thr Ala Glu Leu Leu Gln Val Ala Asn | 410 | 415 | 420 |
| Tyr Gly Val Gly Gly Gln Tyr Glu Pro His Phe Asp Phe Ser Arg | 425 | 430 | 435 |
| Arg Pro Phe Asp Ser Gly Leu Lys Thr Glu Gly Asn Arg Leu Ala | 440 | 445 | 450 |
| Thr Phe Leu Asn Tyr Met Ser Asp Val Glu Ala Gly Gly Ala Thr | 455 | 460 | 465 |
| Val Phe Pro Asp Leu Gly Ala Ala Ile Trp Pro Lys Lys Gly Thr | 470 | 475 | 480 |

Ala Val Phe Trp Tyr Asn Leu Leu Arg Ser Gly Glu Gly Asp Tyr
 485 490 495

Arg Thr Arg His Ala Ala Cys Pro Val Leu Val Gly Cys Lys Trp
 500 505 510

Val Ser Asn Lys Trp Phe His Glu Arg Gly Gln Glu Phe Leu Arg
 515 520 525

Pro Cys Gly Ser Thr Glu Val Asp
 530

<210> 333

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 333

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<210> 334

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 334

ggacccttct gtgtgccag 19

<210> 335

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 335

ggtctcaaga actcctgtc 19

<210> 336

<211> 24

<212> DNA

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<400> 336

acactcagca ttgcctggta cttg 24

<210> 337

<211> 45

<212> DNA

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<220>

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<400> 337

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<210> 338

<211> 2789

<212> DNA

<213> Homo Sapien

<400> 338

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 tcccagtggt agtgaaattg attgtttcat ttattacctt tttggctggg 100
 ggtaggttcc gacaccttca cagttgaaga gcaggcagaa ggagttgtga 150
 agacaggaca atcttcttgg ggatgctggg cctggaagcc agcgggcctt 200
 gctctgtctt tggcctcatt gacccaggt tctctggta aaactgaaag 250
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 ggtggcccat cacttcctc ggttactcta cttactggg cagcgggggg 750
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gcctggctca tgtcagagac cctgcgccac cttcacacac actttggggc 850
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 gccgcctgg gggccctaac ctcattacct ttcctttgtc tgcctcagcc 2700
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 tttttaaata tgaaaatgtt attaaacatg tcttctgcc 2789

<210> 339

<211> 772

<212> PRT

<213> Homo Sapien

<400> 339

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Ser | Ser | Leu | Leu | Ala | Leu | Leu | Arg | Pro | Ala | Leu | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Leu | Gly | Leu | Ser | Leu | Gly | Cys | Ser | Leu | Ser | Leu | Leu | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Trp | Ile | Gln | Gly | Glu | Gly | Glu | Asp | Pro | Cys | Val | Glu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Glu | Arg | Gly | Gly | Pro | Gln | Asn | Pro | Asp | Ser | Arg | Ala | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Gln | Ser | Asp | Glu | Asp | Phe | Lys | Pro | Arg | Ile | Val | Pro | Tyr |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Arg | Asp | Pro | Asn | Lys | Pro | Tyr | Lys | Lys | Val | Leu | Arg | Thr | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ile | Gln | Thr | Glu | Leu | Gly | Ser | Arg | Glu | Arg | Leu | Leu | Val | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|-----|
| Val Leu Thr Ser | Arg Ala Thr Leu Ser | Thr Leu Ala Val Ala | Val |
| | 110 | 115 | 120 |
| Asn Arg Thr Val | Ala His His Phe Pro | Arg Leu Leu Tyr Phe | Thr |
| | 125 | 130 | 135 |
| Gly Gln Arg Gly | Ala Arg Ala Pro Ala | Gly Met Gln Val Val | Ser |
| | 140 | 145 | 150 |
| His Gly Asp Glu | Arg Pro Ala Trp Leu | Met Ser Glu Thr Leu | Arg |
| | 155 | 160 | 165 |
| His Leu His Thr | His Phe Gly Ala Asp | Tyr Asp Trp Phe Phe | Ile |
| | 170 | 175 | 180 |
| Met Gln Asp Asp | Thr Tyr Val Gln Ala | Pro Arg Leu Ala Ala | Leu |
| | 185 | 190 | 195 |
| Ala Gly His Leu | Ser Ile Asn Gln Asp | Leu Tyr Leu Gly Arg | Ala |
| | 200 | 205 | 210 |
| Glu Glu Phe Ile | Gly Ala Gly Glu Gln | Ala Arg Tyr Cys His | Gly |
| | 215 | 220 | 225 |
| Gly Phe Gly Tyr | Leu Leu Ser Arg Ser | Leu Leu Leu Arg Leu | Arg |
| | 230 | 235 | 240 |
| Pro His Leu Asp | Gly Cys Arg Gly Asp | Ile Leu Ser Ala Arg | Pro |
| | 245 | 250 | 255 |
| Asp Glu Trp Leu | Gly Arg Cys Leu Ile | Asp Ser Leu Gly Val | Gly |
| | 260 | 265 | 270 |
| Cys Val Ser Gln | His Gln Gly Gln Gln | Tyr Arg Ser Phe Glu | Leu |
| | 275 | 280 | 285 |
| Ala Lys Asn Arg | Asp Pro Glu Lys Glu | Gly Ser Ser Ala Phe | Leu |
| | 290 | 295 | 300 |
| Ser Ala Phe Ala | Val His Pro Val Ser | Glu Gly Thr Leu Met | Tyr |
| | 305 | 310 | 315 |
| Arg Leu His Lys | Arg Phe Ser Ala Leu | Glu Leu Glu Arg Ala | Tyr |
| | 320 | 325 | 330 |
| Ser Glu Ile Glu | Gln Leu Gln Ala Gln | Ile Arg Asn Leu Thr | Val |
| | 335 | 340 | 345 |
| Leu Thr Pro Glu | Gly Glu Ala Gly Leu | Ser Trp Pro Val Gly | Leu |
| | 350 | 355 | 360 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Pro | Phe | Thr | Pro | His | Ser | Arg | Phe | Glu | Val | Leu | Gly | Trp | |
| | | | | 365 | | | | | | 370 | | | | 375 | |
| Asp | Tyr | Phe | Thr | Glu | Gln | His | Thr | Phe | Ser | Cys | Ala | Asp | Gly | Ala | |
| | | | | 380 | | | | | | 385 | | | | 390 | |
| Pro | Lys | Cys | Pro | Leu | Gln | Gly | Ala | Ser | Arg | Ala | Asp | Val | Gly | Asp | |
| | | | | 395 | | | | | | 400 | | | | 405 | |
| Ala | Leu | Glu | Thr | Ala | Leu | Glu | Gln | Leu | Asn | Arg | Arg | Tyr | Gln | Pro | |
| | | | | 410 | | | | | | 415 | | | | 420 | |
| Arg | Leu | Arg | Phe | Gln | Lys | Gln | Arg | Leu | Leu | Asn | Gly | Tyr | Arg | Arg | |
| | | | | 425 | | | | | | 430 | | | | 435 | |
| Phe | Asp | Pro | Ala | Arg | Gly | Met | Glu | Tyr | Thr | Leu | Asp | Leu | Leu | Leu | |
| | | | | 440 | | | | | | 445 | | | | 450 | |
| Glu | Cys | Val | Thr | Gln | Arg | Gly | His | Arg | Arg | Ala | Leu | Ala | Arg | Arg | |
| | | | | 455 | | | | | | 460 | | | | 465 | |
| Val | Ser | Leu | Leu | Arg | Pro | Leu | Ser | Arg | Val | Glu | Ile | Leu | Pro | Met | |
| | | | | 470 | | | | | | 475 | | | | 480 | |
| Pro | Tyr | Val | Thr | Glu | Ala | Thr | Arg | Val | Gln | Leu | Val | Leu | Pro | Leu | |
| | | | | 485 | | | | | | 490 | | | | 495 | |
| Leu | Val | Ala | Glu | Ala | Ala | Ala | Ala | Pro | Ala | Phe | Leu | Glu | Ala | Phe | |
| | | | | 500 | | | | | | 505 | | | | 510 | |
| Ala | Ala | Asn | Val | Leu | Glu | Pro | Arg | Glu | His | Ala | Leu | Leu | Thr | Leu | |
| | | | | 515 | | | | | | 520 | | | | 525 | |
| Leu | Leu | Val | Tyr | Gly | Pro | Arg | Glu | Gly | Gly | Arg | Gly | Ala | Pro | Asp | |
| | | | | 530 | | | | | | 535 | | | | 540 | |
| Pro | Phe | Leu | Gly | Val | Lys | Ala | Ala | Ala | Ala | Glu | Leu | Glu | Arg | Arg | |
| | | | | 545 | | | | | | 550 | | | | 555 | |
| Tyr | Pro | Gly | Thr | Arg | Leu | Ala | Trp | Leu | Ala | Val | Arg | Ala | Glu | Ala | |
| | | | | 560 | | | | | | 565 | | | | 570 | |
| Pro | Ser | Gln | Val | Arg | Leu | Met | Asp | Val | Val | Ser | Lys | Lys | His | Pro | |
| | | | | 575 | | | | | | 580 | | | | 585 | |
| Val | Asp | Thr | Leu | Phe | Phe | Leu | Thr | Thr | Val | Trp | Thr | Arg | Pro | Gly | |
| | | | | 590 | | | | | | 595 | | | | 600 | |
| Pro | Glu | Val | Leu | Asn | Arg | Cys | Arg | Met | Asn | Ala | Ile | Ser | Gly | Trp | |
| | | | | 605 | | | | | | 610 | | | | 615 | |
| Gln | Ala | Phe | Phe | Pro | Val | His | Phe | Gln | Glu | Phe | Asn | Pro | Ala | Leu | |
| | | | | 620 | | | | | | 625 | | | | 630 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gln | Arg | Ser | Pro | Pro | Gly | Pro | Pro | Gly | Ala | Gly | Pro | Asp | 635 | 640 | 645 |
| Pro | Pro | Ser | Pro | Pro | Gly | Ala | Asp | Pro | Ser | Arg | Gly | Ala | Pro | Ile | 650 | 655 | 660 |
| Gly | Gly | Arg | Phe | Asp | Arg | Gln | Ala | Ser | Ala | Glu | Gly | Cys | Phe | Tyr | 665 | 670 | 675 |
| Asn | Ala | Asp | Tyr | Leu | Ala | Ala | Arg | Ala | Arg | Leu | Ala | Gly | Glu | Leu | 680 | 685 | 690 |
| Ala | Gly | Gln | Glu | Glu | Glu | Glu | Ala | Leu | Glu | Gly | Leu | Glu | Val | Met | 695 | 700 | 705 |
| Asp | Val | Phe | Leu | Arg | Phe | Ser | Gly | Leu | His | Leu | Phe | Arg | Ala | Val | 710 | 715 | 720 |
| Glu | Pro | Gly | Leu | Val | Gln | Lys | Phe | Ser | Leu | Arg | Asp | Cys | Ser | Pro | 725 | 730 | 735 |
| Arg | Leu | Ser | Glu | Glu | Leu | Tyr | His | Arg | Cys | Arg | Leu | Ser | Asn | Leu | 740 | 745 | 750 |
| Glu | Gly | Leu | Gly | Gly | Arg | Ala | Gln | Leu | Ala | Met | Ala | Leu | Phe | Glu | 755 | 760 | 765 |
| Gln | Glu | Gln | Ala | Asn | Ser | Thr | | | | | | | | | 770 | | |

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<211> 1572

<212> DNA

<213> Homo Sapien

<400> 340

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ctttttgaag ggtgtgatgc ttggaagcat tttctgtgct ttgatcacta 150
tgctaggaca cattaggatt ggtcatggaa atagaatgca ccaccatgag 200
catcatcacc tacaagctcc taacaaagaa gatatcttga aaatttcaga 250
ggatgagcgc atggagctca gtaagagctt tcgagtatac tgtattatcc 300
ttgtaaaacc caaagatgtg agtctttggg ctgcagtaaa ggagacttgg 350
accaaacact gtgacaaagc agagttcttc agttctgaaa atgttaaagt 400

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gtttgagtca attaatatgg acacaaatga catgtgggta atgatgagaa 450
 aagcttaciaa atacgccttt gataagtata gagaccaata caactgggtc 500
 ttctttgcac gccccactac gtttgctatc attgaaaacc taaagtattt 550
 tttgttaaaa aaggatccat cacagccttt ctatctagge cacactataa 600
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 cagtttgcct gaaatatgct ggagtatttg cagaaaatgc agaagatgct 800
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 ggcaatgact tatcacccca accaggtagt agaaggctgt tgttcagata 900
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 atgtgataaa ttctaaatta tgaacattag aaatctgtgg ggcacatatt 1350
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<210> 341

<211> 318

<212> PRT

<213> Homo Sapien

<400> 341

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Ser | Glu | Ser | Ser | Ser | Phe | Leu | Lys | Gly | Val | Met | Leu | Gly | 1 | 5 | 10 | 15 |
| Ser | Ile | Phe | Cys | Ala | Leu | Ile | Thr | Met | Leu | Gly | His | Ile | Arg | Ile | 20 | 25 | 30 | |
| Gly | His | Gly | Asn | Arg | Met | His | His | His | Glu | His | His | His | Leu | Gln | 35 | 40 | 45 | |
| Ala | Pro | Asn | Lys | Glu | Asp | Ile | Leu | Lys | Ile | Ser | Glu | Asp | Glu | Arg | 50 | 55 | 60 | |
| Met | Glu | Leu | Ser | Lys | Ser | Phe | Arg | Val | Tyr | Cys | Ile | Ile | Leu | Val | 65 | 70 | 75 | |
| Lys | Pro | Lys | Asp | Val | Ser | Leu | Trp | Ala | Ala | Val | Lys | Glu | Thr | Trp | 80 | 85 | 90 | |
| Thr | Lys | His | Cys | Asp | Lys | Ala | Glu | Phe | Phe | Ser | Ser | Glu | Asn | Val | 95 | 100 | 105 | |
| Lys | Val | Phe | Glu | Ser | Ile | Asn | Met | Asp | Thr | Asn | Asp | Met | Trp | Leu | 110 | 115 | 120 | |
| Met | Met | Arg | Lys | Ala | Tyr | Lys | Tyr | Ala | Phe | Asp | Lys | Tyr | Arg | Asp | 125 | 130 | 135 | |
| Gln | Tyr | Asn | Trp | Phe | Phe | Leu | Ala | Arg | Pro | Thr | Thr | Phe | Ala | Ile | 140 | 145 | 150 | |
| Ile | Glu | Asn | Leu | Lys | Tyr | Phe | Leu | Leu | Lys | Lys | Asp | Pro | Ser | Gln | 155 | 160 | 165 | |
| Pro | Phe | Tyr | Leu | Gly | His | Thr | Ile | Lys | Ser | Gly | Asp | Leu | Glu | Tyr | 170 | 175 | 180 | |
| Val | Gly | Met | Glu | Gly | Gly | Ile | Val | Leu | Ser | Val | Glu | Ser | Met | Lys | 185 | 190 | 195 | |
| Arg | Leu | Asn | Ser | Leu | Leu | Asn | Ile | Pro | Glu | Lys | Cys | Pro | Glu | Gln | 200 | 205 | 210 | |
| Gly | Gly | Met | Ile | Trp | Lys | Ile | Ser | Glu | Asp | Lys | Gln | Leu | Ala | Val | 215 | 220 | 225 | |
| Cys | Leu | Lys | Tyr | Ala | Gly | Val | Phe | Ala | Glu | Asn | Ala | Glu | Asp | Ala | 230 | 235 | 240 | |
| Asp | Gly | Lys | Asp | Val | Phe | Asn | Thr | Lys | Ser | Val | Gly | Leu | Ser | Ile | 245 | 250 | 255 | |
| Lys | Glu | Ala | Met | Thr | Tyr | His | Pro | Asn | Gln | Val | Val | Glu | Gly | Cys | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 260 | | 265 | | 270 | | | | | | | | | |
| Cys | Ser | Asp | Met | Ala | Val | Thr | Phe | Asn | Gly | Leu | Thr | Pro | Asn | Gln |
| | 275 | | | | | | | | 280 | | | | 285 | |
| Met | His | Val | Met | Met | Tyr | Gly | Val | Tyr | Arg | Leu | Arg | Ala | Phe | Gly |
| | 290 | | | | | | | | 295 | | | | 300 | |
| His | Ile | Phe | Asn | Asp | Ala | Leu | Val | Phe | Leu | Pro | Pro | Asn | Gly | Ser |
| | 305 | | | | | | | | 310 | | | | 315 | |

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<400> 343

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<211> 28

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<223> Synthetic Oligonucleotide Probe

<400> 344

gcccaaagtc cctaaggcgc tatacccc 28

<210> 345

<211> 50

<212> DNA

<213> Artificial Sequence

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<210> 346

<211> 25

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<400> 346

gggatgcagg tgggtgtctca tgggg 25

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<211> 18

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<223> Synthetic Oligonucleotide Probe

<400> 347

ccctcatgta ccggctcc 18

<210> 348

<211> 48

<212> DNA

<213> Artificial Sequence

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<400> 349

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<211> 48

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<400> 350

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<400> 351

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<210> 352

<211> 47

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<211> 48

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<400> 354

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<210> 357

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<210> 358

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<210> 359

<211> 48

<212> DNA

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<400> 359

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<210> 365

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<210> 369

<211> 48

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<400> 369

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<211> 48

<212> DNA

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<210> 371

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<210> 373

<211> 48

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<400> 373

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<210> 374

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<210> 375

<211> 48

<212> DNA

<213> Artificial Sequence

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<210> 376

<211> 997

<212> DNA

<213> Homo Sapien

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agggagggag agaaaaagag agagagagaa acaaaaaacc aaagagagag 100

aaaaaatgaa ttcattctaaa tcattctgaaa cacaatgcac agagagagga 150

tgtttctctt cccaaatgtt cttatggact gttgctggga tccccatcct 200

atttctcagt gctgttttca tcaccagatg tggtgtgaca ttctgcattc 250

ttcaaacctg tgatgagaaa aagtttcagc tacctgagaa ttccacagag 300

ctctcctgct acaattatgg atcaggttca gtcaagaatt gttgtccatt 350

gaactgggaa tattttcaat ccagctgcta cttcttttct actgacacca 400

tttcctgggc gttaagttta aagaactgct cagccatggg ggctcacctg 450

gtgggttatca actcacagga ggagcaggaa ttcttttctt acaagaaacc 500

taaaatgaga gagtttttta ttggactgtc agaccagggt gtcgaggggc 550

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tcaattatct tcggatttgt gaaatggtag gaataaatcc tttgaacaaa 750

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<210> 377

<211> 219

<212> PRT

<213> Homo Sapien

<400> 377

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| Met | Asn | Ser | Ser | Lys | Ser | Ser | Glu | Thr | Gln | Cys | Thr | Glu | Arg | Gly | 1 | 5 | 10 | 15 |
| Cys | Phe | Ser | Ser | Gln | Met | Phe | Leu | Trp | Thr | Val | Ala | Gly | Ile | Pro | 20 | 25 | 30 | |
| Ile | Leu | Phe | Leu | Ser | Ala | Cys | Phe | Ile | Thr | Arg | Cys | Val | Val | Thr | 35 | 40 | 45 | |
| Phe | Arg | Ile | Phe | Gln | Thr | Cys | Asp | Glu | Lys | Lys | Phe | Gln | Leu | Pro | 50 | 55 | 60 | |
| Glu | Asn | Phe | Thr | Glu | Leu | Ser | Cys | Tyr | Asn | Tyr | Gly | Ser | Gly | Ser | 65 | 70 | 75 | |
| Val | Lys | Asn | Cys | Cys | Pro | Leu | Asn | Trp | Glu | Tyr | Phe | Gln | Ser | Ser | 80 | 85 | 90 | |
| Cys | Tyr | Phe | Phe | Ser | Thr | Asp | Thr | Ile | Ser | Trp | Ala | Leu | Ser | Leu | 95 | 100 | 105 | |
| Lys | Asn | Cys | Ser | Ala | Met | Gly | Ala | His | Leu | Val | Val | Ile | Asn | Ser | 110 | 115 | 120 | |
| Gln | Glu | Glu | Gln | Glu | Phe | Leu | Ser | Tyr | Lys | Lys | Pro | Lys | Met | Arg | 125 | 130 | 135 | |
| Glu | Phe | Phe | Ile | Gly | Leu | Ser | Asp | Gln | Val | Val | Glu | Gly | Gln | Trp | 140 | 145 | 150 | |
| Gln | Trp | Val | Asp | Gly | Thr | Pro | Leu | Thr | Lys | Ser | Leu | Ser | Phe | Trp | 155 | 160 | 165 | |
| Asp | Val | Gly | Glu | Pro | Asn | Asn | Ile | Ala | Thr | Leu | Glu | Asp | Cys | Ala | 170 | 175 | 180 | |

Asn Pro Leu Asn Lys Gly Lys Ser Leu
215

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tattcctacc atttcacaaa tccg 24

<213> Artificial Sequence

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ggaggactgt gccaccatga gagactcttc aaaccaagc caaaattgg 49

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

gcagattttg aggacagcca cctcca 26

<210> 382
<211> 18
<212> DNA
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<400> 382
ggccttgcag acaaccgt 18

<210> 383
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<210> 384
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<400> 384
cagctgccct tccccaacca 20

<210> 385
<211> 18
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<400> 385
catcaagcgc ctctacca 18

<210> 386
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cacaaactcg aactgcttct g 21

<210> 387

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<210> 390

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<213> Artificial Sequence

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cagaaggatg tcccgtggaa 20

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<210> 392

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<210> 393

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atgtcctcca tgcccacgcg 20

<210> 394

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gagtgcgaca tcgagagctt 20

<210> 395

<211> 18

<212> DNA

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| Met | Ala | Leu | Arg | Arg | Pro | Pro | Arg | Leu | Arg | Leu | Cys | Ala | Arg | Leu | 1 | 5 | 10 | 15 |
| Pro | Asp | Phe | Phe | Leu | Leu | Leu | Leu | Phe | Arg | Gly | Cys | Leu | Ile | Gly | 20 | 25 | 30 | |
| Ala | Val | Asn | Leu | Lys | Ser | Ser | Asn | Arg | Thr | Pro | Val | Val | Gln | Glu | 35 | 40 | 45 | |
| Phe | Glu | Ser | Val | Glu | Leu | Ser | Cys | Ile | Ile | Thr | Asp | Ser | Gln | Thr | 50 | 55 | 60 | |
| Ser | Asp | Pro | Arg | Ile | Glu | Trp | Lys | Lys | Ile | Gln | Asp | Glu | Gln | Thr | 65 | 70 | 75 | |
| Thr | Tyr | Val | Phe | Phe | Asp | Asn | Lys | Ile | Gln | Gly | Asp | Leu | Ala | Gly | 80 | 85 | 90 | |
| Arg | Ala | Glu | Ile | Leu | Gly | Lys | Thr | Ser | Leu | Lys | Ile | Trp | Asn | Val | 95 | 100 | 105 | |
| Thr | Arg | Arg | Asp | Ser | Ala | Leu | Tyr | Arg | Cys | Glu | Val | Val | Ala | Arg | 110 | 115 | 120 | |
| Asn | Asp | Arg | Lys | Glu | Ile | Asp | Glu | Ile | Val | Ile | Glu | Leu | Thr | Val | 125 | 130 | 135 | |
| Gln | Val | Lys | Pro | Val | Thr | Pro | Val | Cys | Arg | Val | Pro | Lys | Ala | Val | 140 | 145 | 150 | |
| Pro | Val | Gly | Lys | Met | Ala | Thr | Leu | His | Cys | Gln | Glu | Ser | Glu | Gly | 155 | 160 | 165 | |
| His | Pro | Arg | Pro | His | Tyr | Ser | Trp | Tyr | Arg | Asn | Asp | Val | Pro | Leu | 170 | 175 | 180 | |
| Pro | Thr | Asp | Ser | Arg | Ala | Asn | Pro | Arg | Phe | Arg | Asn | Ser | Ser | Phe | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Asn | Ser | Glu | Thr | Gly | Thr | Leu | Val | Phe | Thr | Ala | Val | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Asp | Asp | Ser | Gly | Gln | Tyr | Tyr | Cys | Ile | Ala | Ser | Asn | Asp | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Ser | Ala | Arg | Cys | Glu | Glu | Gln | Glu | Met | Glu | Val | Tyr | Asp | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Ile | Gly | Gly | Ile | Ile | Gly | Gly | Val | Leu | Val | Val | Leu | Ala | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Ala | Leu | Ile | Thr | Leu | Gly | Ile | Cys | Cys | Ala | Tyr | Arg | Arg | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Tyr | Phe | Ile | Asn | Asn | Lys | Gln | Asp | Gly | Glu | Ser | Tyr | Lys | Asn | Pro |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Lys | Pro | Asp | Gly | Val | Asn | Tyr | Ile | Arg | Thr | Asp | Glu | Glu | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Asp | Phe | Arg | His | Lys | Ser | Ser | Phe | Val | Ile | | | | | |
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